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ABSTRACT

The articles in this publication cover a variety of topics related to college reading instruction. The topics of the twenty-two papers include the following: (1) innovation in audio-visual vocabulary programs, (2) a survey of learning centers/laboratories in Hawaii, (3) a summer program for high risk readers, (4) oral reading tests and black students, (5) the use of an English placement test in reading to develop a college reading program at a California state university, (6) instantiation--one difference between adults and children when reading, (7) the important student variable of locus of control in a college learning center, (8) results of a modified personalized system of instruction, (9) guiding comprehension in the learning assistance setting, (10) helping vocational students succeed in technical reading at the community college level, (11) probing skills for tutors, (12) what learning centers can do about math anxiety, (13) a videocassette mastery-learning tutor training course, (14) a systematic program for the transfer of learning skills to the content areas, (15) computers and readability, (16) a gestalt approach to study skills, (17) a search for the structure of meaning in the teaching of communication skills, (18) teaching reading to non-English speaking adults, (19) the "academic seven year itch" and a possible remedy, (20) another look at college developmental reading courses, (21) a model for individualized instruction, and (22) a learning assistance support system for disadvantaged nursing students. (CRH)

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PROCEEDINGS OF THE TWELFTH
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OF THE



READING
LEARNING ASSISTANCE
DEVELOPMENTAL EDUCATION
TUTORIAL SERVICES

VOLUME XII

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PROCEEDINGS OF THE TWELFTH ANNUAL CONFERENCE OF THE



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PREFACE

Twenty-two papers were selected by the WCRA *Proceedings* editorial team from thirty-three manuscripts submitted for possible publication. All papers appearing in the following pages were presented at the Twelfth Annual Conference of the Western College Reading Association, held in Honolulu, Hawaii, April 7-10, 1979, and in Kailua-Kona, Hawaii, April 11-15, 1979. All manuscripts, except one, were read by at least three editorial advisors; most were reviewed and edited by five. The exception was a worthy manuscript received too late to be read by more than one editor.

Credit for the content in this volume belongs to those authors whose names appear in the *Table of Contents*. Acknowledgements for most editorial determinations go to the editorial advisors whose names appear on the very first page; responsibility for cutting all permutations of s/he, he/she, him/her and himself/herself from this yearbook belongs to this editor alone. This decision grew naturally from a longing the editorial team shares for clarity and grace in written prose.

Gwyn Enright
9/19/79

**THIRTEENTH ANNUAL CONFERENCE
WESTERN COLLEGE READING ASSOCIATION**

**The 1980's:
New Sources of Energy for Learning
March 27-30, 1979
San Francisco, California**

TABLE OF CONTENTS

Keynote Address

- The Academic Seven Year Itch and a Possible Home Remedy 1
Catherine M. Warrick

Investigations and Evaluations

- The Audio-Visual Vocabulary Program (AVVP):
 An Innovation in Practice 6
Elizabeth A. Karzag
- Yet Another Look at College Developmental Reading Courses 12
Gene Kerstiens
- A Survey of Learning Centers/Laboratories in Hawaii 19
Karen K. Kusunoki
- A Summer "Hype" for High Risk Readers 25
Betty Levinson and Florence Cohn
- Are Oral Reading Tests Fair to Black Students? 31
Anna-Marie Schlender
- The Use of The *English Placement Test: Reading* in Developing
 a College Reading Program at California State University,
 Northridge 36
Christine C. Smith
- Instantiation: One Difference Between Adults and Children
 When Reading 43
David B. Spencer
- Locus of Control: An Important Student Variable in the
 College Learning Center 48
Nancy N. Spivey and Delryn R. Fleming
- A Modified Personalized System of Instruction 56
Nancy Steiner

Programs and Practices

- Guiding Comprehension in the Learning Assistance Setting 60
Thomas W. Bean
- Vocational Technical Reading: Helping Vocational Students
 Succeed at the Community College Level 64
William E. Broderick

Probing Skills for Tutors	68
<i>Beryl E. Brown</i>	
Math Anxiety: What Can a Learning Center Do About It?	75
<i>Mike Dellens</i>	
A Videocassette Mastery Learning Tutor Training Course	81
<i>June Dempsey</i>	
A Systematic Program for the Transfer of Learning Skills to the Content Areas	87
<i>Gwyn Enright</i>	
The Byte-Size Revolution: Computers and Readability	96
<i>Russell D. Gregory</i>	
Study Skills: A Gestalt Approach	105
<i>Robert W. Kopfsstein</i>	
Teaching Communications Skills: A Search for the Structure of Meaning	112
<i>Elizabeth Lyman</i>	
A Model for Individualizing Instruction	117
<i>William H. Rupley, Francis E. Clark and Timothy R. Blair</i>	
Teaching Reading to Non-English Speaking Adults	122
<i>E. Sue Saunders</i>	
Learning Assistance Support System for Disadvantaged Nursing Students	128
<i>Frances S. Xenakis</i>	

THE ACADEMIC SEVEN YEAR ITCH AND A POSSIBLE HOME REMEDY

Catherine M. Warrick
Metropolitan State College

Watchers of the higher education scene, college administrators faced with a no-growth environment in institutions of higher education, faculty organizations and unions at the bargaining table, and legislative committees in state house and senate chambers are becoming aware of a new kind of problem in higher education. Perhaps in small measure it has always been there, but recently it has begun to reach epidemic proportions. We call it the academic seven year itch because it is a phenomenon which frequently displays its first symptoms about the time when certain faculty achieve tenure, and in many institutions this corresponds to one's seventh year of professional service. The symptoms are a preoccupation with what one expects to be doing in five years; doubts about how many more consecutive times one can face another class of freshman composition, western civilization, or introduction to chemistry; a lessening of enthusiasm for teaching in general; and a movement toward methods of class evaluation which lend themselves to machine scoring. Indeed, this phenomenon has been observed by mid-career counseling and change specialists such as Haldene Associates, by professional organizations such as the Professional Organizational Development Network in Higher Education, and by many foundations and governmental agencies which have been funding faculty development activities around the country — Lilly, Carnegie, Kellogg, The Office of Education.

Is the problem really more acute than before, or have we just gotten around to noticing it? My thesis is that it is genuinely more acute, and I believe I can tell you why. When I entered college teaching in the Fall of 1958, I joined a small department offering a major, as well as many service courses, and I rarely had time to think much about my future. In five years I prepared fourteen different courses. On the semester system that was more than one new course each term. As higher education began to grow, I was pushed into light administrative responsibilities. Because I did reasonably well in ad-

ministration, I soon found myself looking at an entirely new set of professional opportunities. It was also possible to make occasional contributions to journals, meetings, newsletters, etc.; indeed, such contributions were actively solicited.

As I observe young faculty entering the profession now, I cannot assure them that their opportunities will be as rich as mine have been. With many collegiate departments already tenured in and limits being placed in some quarters on the percentage of faculty who may become tenured at an institution, job security is far from a sure thing. If one is fortunate enough to achieve tenure, what are the prospects?

With the rapid growth of higher education in the 60's, most academic departments, particularly at regional state-funded institutions, increased substantially in size. People were hired to teach their specialties, which means the range of courses they handled from year to year was relatively small. When a new specialty was needed, a new person was hired to teach and/or develop the area. Professional expansion increasingly did not occur through new course or program development.

With these sorts of opportunities decreased, professional reward was sought through other means: moving to a new school, publishing in one's field, or seeking administrative opportunity. In the 1960's these were viable alternatives. The rapid growth in enrollments meant that new institutions were being built and others were expanding; job opportunity was wonderful — it was a seller's market — and additional administrators were needed by the dozen.

In 1979, do these conditions still exist? Unfortunately not. Job mobility is becoming almost impossible except for a few highly sought after individuals. Our institution recently had faculty openings in both the English and History Departments, and for each of those positions over 300 persons applied. It has gotten to the point that one hates to advertise an opening because of the arduous, sometimes overwhelming, task of evaluating the applications. For administrative posts the situation is, if anything, worse. A recent administrative position in the Denver vicinity attracted over 600 applicants; a post in Montana, hardly a place that flocks of people have sought out, recently drew over 400 applicants. Increasingly the jobs that are available ask for administrative experience. To help promising young professionals acquire some experience, institutions are beginning to look at junior administrative posts as rotating traineeships or internships and professional organizations are handling junior staff positions in a comparable manner.

What about the stimulation of scholarly activity? It is still possible for any one person who wishes to do so to pursue scholarship in his special area, but getting published is quite another matter. Only 10% of our academic professionals account for over 90% of the scholarly research that is published in this country, and those persons are disproportionately located at large research universities that have low teaching loads. Such people are hard to compete with! The research associate in our Center for Experimental Studies

and I recently had an article accepted in a refereed journal that focuses on innovation in higher education. We were pleased to be accepted for publication but dismayed to learn that the publication date would be the summer of 1980, two years after the article was originally submitted.

So far I have attempted to describe the malady and have tried to make the case for it being a real rather than an imagined problem. Almost all academic administrators with whom I converse are greatly distressed by the problem and are seeking solutions to faculty renewal. The titles of the programs vary — faculty development, retooling — but the problem which efforts are designed to address is basically the same — the faculty "blahs."

My title suggests that I believe remedies are available and homegrown ones at that. My optimism is based on several assumptions which I have come to accept after thirteen years of administering experimental programs in higher education. First, I believe that all people enjoy being successful. It is an odd individual who enjoys failure or who is happy with having completed an assignment or discharged a responsibility in a half-hearted or barely adequate manner. It is particularly true of professional people that they need to feel pride in their work. Teaching faculty are no exception.

Secondly, my experience suggests that teaching faculty on the whole really want to be good teachers. It gives them pleasure to see students succeed, flower, mature, respond to their tutelage. Conversely, they are discouraged when only a minority of students seems to grasp the courses, ideas, ways of approaching problems that they are trying to convey in their classes. To be sure, not all faculty enjoy working with all kinds of students, but increasingly most are aware that they will probably not be allowed the luxury of teaching only a selected group of students with whom they will feel or be able to develop a true intellectual comradeship in the course of a term.

Further, I am convinced that a significant majority of college faculty know very little about teaching and learning. Most teach as they were taught, preferring the pattern followed by their favorite, major, graduate professors. The graduate seminar where each teaches all is the ideal for which they long and strive. This observation is not meant to be deprecating nor a basis for indictment. It is a simple fact, and it should not be surprising since the study of how people learn is restricted largely to a few students in Graduate Schools of Education. Many faculty do not regard this as important information at all; it is the student's responsibility to learn. And yet, there is disappointment when the student does not learn with the assumption being that there must be something wrong with the student or what the student did.

If faculty enjoy success as do most other people, if most faculty enjoy being successful in their teaching, but if most know little about how learning actually occurs, it follows that faculty renewal might be obtained in part through a renaissance in teaching or a revolution in teaching excellence. At Metropolitan State College this is indeed what is occurring, and two examples should suffice to make the point.

Our college is a four-year, open admissions, urban, commuter institution. Through research and testing we learned that the majority of students in our freshman courses had not developed in their cognitive skills sufficiently to be classified (using Jean Piaget's classification system and criteria) as formal thinkers. In spite of Piaget's early belief that this level of cognitive functioning is usually developed around age 16, other American institutions of higher education have made a similar discovery about groups of their students — Rutgers University, the University of Nebraska-Lincoln, the University of Oklahoma, Xavier University in New Orleans, and Illinois Central College, to name a few. Unfortunately, most college courses begin from an assumption that the students in these courses have already mastered certain cognitive skills, and they begin there. At MSC we were able to tempt faculty from ten departments to consider teaching one section of their freshman courses quite a different way — a way that consciously strove to develop the cognitive skills which the students had not yet acquired. We called the program the STAR Program and the current participating departments are chemistry, economics, English, earth science, history, mathematics, philosophy, physics, psychology, and reading. The success of the experiment was outstanding, and it has been presented at a number of conferences and in several journals. The important thing for this discussion is that the participating faculty have found a new and exciting focus for professional activity. Half have been published as a result of their work, half a dozen have been recently promoted; their enthusiasm and success have brought another dozen faculty into the experiment.

A similar outcome has been experienced by a number of faculty who began working on a PSI (Personalized System of Instruction) version of introductory courses that had terrible retention and success rates. In beginning geology, a 40% retention and success rate rose to 80% with no loss in learning. In beginning logic, the rate is up to 82% with an increase in learning and average grade. In beginning reading courses, the McGraw-Hill tests used for pre and post test measures showed *significantly* greater achievement. For participating faculty this has been profoundly rewarding.

We can prove that involvement in teaching improvement will provide new professional impetus and pride for many discouraged faculty. A legitimate question is, however, why am I telling you? Because at Metropolitan State College, it is reading and learning assistance staff that have been our principal colleagues in achieving these results. There are several reasons why this should have been so.

Faculty respond better to colleagues who solicit their participation in educational experimentation than they do to administrators who attempt the same thing. Given issues of academic freedom, you simply have a better chance of involving your faculty colleagues than deans and vice presidents have.

Most of you have a background about how learning occurs that your colleagues lack. You are in a position to provide leadership on issues of

teaching and learning that is badly needed. It is very important how this leadership is expressed, but that is another paper.

You have access to students with needs who can be used as the entry point for working with individuals; that is, your common students can be the common focus, cause, reason for collegial activity.

I have tried to indicate to you three positive reasons why I believe you should seriously consider trying to engage your faculty colleagues in instructional development activities. In all fairness, I must also admit that there are some powerful negative reasons as well. Leading the list is the fact that I do not believe that learning assistance programs can expect either an internal or external increase in funding and staff resources. I am doubtful that our Skills Reinforcement Center can expect to grow and I doubt that your programs will grow either. Word has it that funding for the federal Trio-programs will be cut this year. On my North Central Association accreditation visits, I have not visited a single campus in three years that is growing. If learning support programs are going to be able to continue to do their job and, in fact, increase the number of needy students they reach, a new strategy will be needed. My purpose is to suggest to you a powerful new strategy — extend your influence and the help students can receive by getting the faculty to work with you and share your burdens. For every faculty person whom you can involve in more effective instructional practices, your personal impact on students will be exactly doubled. If I have been unable to persuade you previously to join this faculty development movement, I hope this latter consideration will be compelling enough to start you thinking.

Join efforts with us — the Center for Experimental Studies, the Skills Reinforcement Center, and the Reading Department of Metropolitan State College. You will benefit through increased influence, outreach, and stature in the academic community; your faculty colleagues will benefit by catching a new professional vision and opportunity; your institutions will benefit through improved retention rates and reputation for quality education. Most of all, your students will benefit from increased instructional effectiveness.

You have some special advantages working for you in adopting this additional mission opportunity, and the time is right. Don't let this unique moment in the history of higher education pass you by.

THE AUDIO-VISUAL VOCABULARY PROGRAM (AVVP): AN INNOVATION IN PRACTICE

Elizabeth A. Karzag
Evergreen Valley College

The English political writer Edmund Burke once wrote to a friend, "A very great part of the mischiefs that vex this world arises from words." This quote exemplifies a typical difficulty encountered by "underprepared" students in a specific discipline for the first time. "Underprepared" is defined for purposes of this paper as lack of past experience in a specific discipline or lack of previous opportunities for exposure to vocabulary associated with that discipline.

Students, counselors and faculty at Evergreen Valley College, in south-east San Jose, recognized this problem of "words" as a distinctive vexation for underprepared students. In response to this problem, I developed an Audio-Visual Vocabulary Program (AVVP) to meet general vocabulary needs in specific disciplines.

The existing program

Students at Evergreen Valley College can enroll in an open entry/exit study assistance guidance course under the Learning Assistance and Alternatives Program (LAAP). A variety of math, business, study skill, communication skill, vocational, English as a second language, self-development and special subject programs in multi-media formats are available for drop-in and enrolled students.

Students' needs stated

The Evergreen faculty, staff and students who had voiced their vexation with "words" to me, indicated they needed a vocabulary program which involved active learning of auditory, visual and contextual recognition of specific foundational vocabulary terms. In addition, pronunciation of terms in verbal communication was a primary concern of faculty and non-native English speaking students. A review of the LAAP vocabulary materials

revealed a deficit of specialized vocabulary programs for vocabulary acquisition and apperception. Existent commercial vocabulary programs in LAAP included mainly rote review of general everyday vocabulary with a sample of exercises using the vocabulary in context. No program was found to offer a multi-sensory, mastery approach to learning vocabulary.

Upon the recommendations and input from faculty and students representing the nursing and social science disciplines, I chose to develop foundational vocabulary word lists for the AVVP program for three courses under these two disciplines: anatomy and physiology, general psychology, and U.S. history.

AVVP design and development

I established the following detailed outline for the development of the AVVP program.

- A. Selection of discipline
 1. Instructor input
 2. Student input
- B. Collection of vocabulary words
 1. Textbook glossaries
 2. Instructor input
 3. Student input
- C. Arrangement of vocabulary words
 1. Hierarchy established (words in beginning sets assist in defining words in later sets)
 2. Words divided into sets (10 to 14 words in each set)
 3. Simple definitions used (consult instructors, references)
 4. Terms and definitions typed on Bell and Howell *Language Master* cards
- D. Construction of the program
 1. Tests
 - a. Pretests (random selection of 20 words including at least one term from each set)
 - b. set post tests (simple matching of words with definitions — definitions are those which appear on the *Language Master* cards)
 - c. Final post tests (same as D.1.a. including words not on pretests)
 2. Answer keys — self-correcting
 - a. Objective test answers
 - b. Percentile key — for analysis of mastery level
 3. Audio, verbal and kinesthetic activities/contextual comprehension activities
 - a. Establish from objectives *Language Master* card activities
 1. Word recognition practice
 2. Pronunciation practice
 3. Spelling practice

- b. Establish from objectives contextual comprehension activities
 - 1. Term etymologies, multiple meanings
 - 2. Structural analysis
 - 3. Context practice
 - 4. Record keeping instructions and charts
 - a. Test scores and unmastered terms
 - b. Exercise and activity charts
 - 5. Student guidebook
 - a. Introduction/rationale of programs
 - b. Organization of charts, exercises and tests
 - c. *Language Master* operation: diagrams and instructions
- E. Recording
 - 1. Guidebook introduction and instructions
 - 2. Spelling tests for each subject on separate tapes
 - 3. Vocabulary terms on *Language Master* cards
- F. Dissemination of availability of AVVP at Evergreen
 - 1. Campus newspaper
 - 2. Memo to all faculty and staff
 - 3. Attendance at counselor meetings, supportive services staff meetings
 - 4. Personal contact with instructors
 - 5. Article in local community college and junior college newsletter

Student procedures

Students follow the taped guidebook procedures for self-instruction and self-pacing. After students take the pretests, they begin using the vocabulary card set which precedes any terms missed on the definition pretests. Students use *Language Master* cards in each set by listening to the term pronounced; recording and listening to their own pronunciation; reading and writing the term; and using the term in several contextual exercises. After completing the guidebook steps with each *Language Master* vocabulary card set, students take set post tests for immediate feedback of their vocabulary mastery. After all card sets have been completed, students take the final post tests. All tests, scores and exercises are recorded and organized by the students for easy access and review. Students have constant visual feedback on their work and progress in the AVVP program as well as human feedback from LAAP staff members throughout the program.

AVVP's pilot program results

The first twelve participants in the pilot AVVP program were from a diversified cultural and social background. Some were recent high school graduates and others had been out of school for 10 to 27 years. Over half were attending college for the first time.

Chart I represents the students' pretest, last set post test and final post test scores (if they were able to complete all card sets). Only definition test scores are indicated in Charts I, II and III.

CHART I

Subject No.	AVVP Subject	Pretest Score	Last set Post test Score	Final Post test Score
1	P	65%	100%	90%
2	P	65%	100%	—
3	H	40%	80%	—
4	P	65%	100%	100%
5	H	45%	77.5%	90%
6	H	50%	84%	—
7	P	90%	100%	100%
8	P	85%	100%	100%
9	H	70%	100%	—
10	A&P	80%	100%	95%
11	A&P	45%	100%	100%
12	A&P	85%	100%	—

P = general psychology
A&P = anatomy and physiology
H = U.S. history

CHART II

Student No.	Pretest Score	Final Post test Score	Net Gain
1	65%	90%	25%
4	65%	100%	35%
5	45%	90%	45%
7	90%	100%	10%
8	85%	100%	15%
10	80%	95%	15%
11	45%	100%	55%

More than half of the students completed the final post tests. These students spent an average of 52 to 78 hours during a 16 week semester

working on the AVVP program. Other students who were enrolled for fewer units in the guidance program worked an average of 13 to 26 hours on the AVVP program. Chart II compares pretest scores to final post test scores and indicates net gain. Chart III compares students' mean pretest scores with mean final post test scores and indicates average net gain for those students who complete all card sets of the AVVP program.

CHART III

Mean Pretest Score	Mean Final Posttest Score	Average Net Gain
68%	96%	28%

As indicated by all set post test scores and especially by the net gains illustrated in Chart II, it is evident that students increased their vocabulary by using the AVVP program. The scores available from pretests, set post tests and final post tests (Charts I & II) demonstrate vocabulary improvement in specific subject areas.

Students' oral and written reports indicated that the AVVP vocabulary they studied enhanced their understanding of lecture courses. In addition to the positive subjective analyses of students' vocabulary improvement, students' final grades in coinciding lecture courses were average or above average.

For the future

Future investigations could involve a variety of AVVP experimental groups compared with a control group of equally matched students to determine optimum learning conditions for students who lack a foundation vocabulary in a specific discipline. Such an investigation could answer the question "Is it academically more advantageous for a student to enroll concurrently in the AVVP program which coincides with his lecture class, or is it more advantageous for a student to complete the AVVP program in a particular discipline prior to enrolling in the lecture class?" Future data collected on each student enrolled in the AVVP program could evince supportive results for one procedure over the other. However, as in all studies and new programs, one cannot exclude or control all factors which may contribute to student success. Such factors as individualized tutoring, number of hours spent studying vocabulary words, number of hours employed per week and self-concept should be considered in future studies.

Innovation expansion

AVVP results thus far demonstrate that the step by step vocabulary mastery of word sets is a contributing factor of AVVP participants' overall

academic success in specific disciplines. The AVVP program provides Evergreen students with an innovative approach to specialized vocabulary acquisition and apperception. Currently, students use the program to meet their personal needs. Some use the set post tests for review after they have taken an anatomy and physiology or psychology course. Non-native English speaking students use the *Language Master* vocabulary cards for auditory and word recognition, pronunciation and spelling skills. Several Evergreen faculty members and students are developing vocabulary lists for specific classes for incorporation into the AVVP format. It is most encouraging to experience faculty and students involved in the expansion of the original innovation in meeting the individual needs of students.

YET ANOTHER LOOK AT COLLEGE DEVELOPMENTAL READING COURSES

Gene Kerstiens
El Camino College

The developmental reading course is ordinarily included as an integral component of developmental (compensatory/remedial) programs in post-secondary institutions. (15) During the last forty years, courses in developmental reading have, and to the concern of critics, multiplied on college campuses to the extent that this proliferation can be considered big business and even as an industry that is preoccupied with its self-perpetuation. (17) Therefore, research focusing on the effectiveness of developmental reading offerings might be of interest to those responsible for the content, emphases, and direction of these courses.

Background

A review of the research and related literature encourages the following perceptions concerning college-level developmental reading courses as they are typically conducted.

- The objectives as well as the methodologies applied in most developmental reading programs have not changed essentially during the last forty-seven years. (9, 17)
- The typical developmental reading program is designed with an emphasis on the development of comprehension, vocabulary, reading rate and study skills. (9, 10, 17)
- Such courses characteristically ignore aural decoding or "phonics" as an instructional strategy. (9, 10, 17)
- The training and competency of reading instructors is not sufficient for them to provide appropriate instruction in phonic analysis, even if such treatment were deemed desirable. (6, 7, 11, 12)
- A high proportion of students enrolled in college developmental reading programs can be measured as experiencing from slight to severe degrees of phonic disablement. (1, 3, 9, 10)

- College students' ability in word recognition (13) and aural decoding skills (1, 3, 14) is related or prerequisite to reading comprehension.

Such conditions, then, give rise to two questions: 1) Does the typical college reading course repair students' phonic disabilities to a significant degree, and 2) do students who are severely phonically disabled benefit from the treatment provided in the course?

Littrell (10) attacked the first question directly, reporting a study indicating that phonically disabled students completing a typical junior college developmental reading class enjoyed measurable improvement in phonic skills³, even though the class did not employ strategies or programs specifically designed to reduce phonic disability.

Comparing an experimental group (students in a developmental reading class: N=43) with a control group (students in a first-year English class: N=15), Littrell identified phonically disabled students via a pre-test on the *California Phonics Survey*. CPS post-test gains showed that the reading students enjoyed statistically significant (.05 level) gains over the English students. He concluded that "junior college students had their phonic disability reduced when they were enrolled in a typical junior college reading class." (10:151)

Noticing that the samples in this study were comparatively small and were taken from a Mid-western college, we posed the following question: what would happen if the essential thrust of the study were replicated employing larger samples, a variety of instructors, and college students in another region?

The study

During the 1977 spring semester and summer session, a total of fourteen classes taught by nine seasoned instructors and involving a measured population of 469 students in a large, urban, California community college were studied. The testing, dropout, and sorting experience of this population appear in Table 1.

This experience and treatment occasioned "refined" experimental and control groups (N = 106 and 113 respectively). These groups can be considered to be reasonably congruent since students in both groups were those whose total entry-level percentile scores on the *New Purdue Test in English* ranged from the 17th to 57th percentile. (4, 8)

Following the conditions and design of the Littrell study, reading classes focused on vocabulary development, reading rate, comprehension, and study skills — the skills emphasized in the typical college developmental reading course. (9, 10) The English classes involved instruction primarily in grammar, usage, and compositional skills. Of course, no specific or discrete instruction in aural decoding skills or phonic analysis was provided students in any of these classes.

TABLE 1

Testing, Dropout, and Sorting Experience
of Measured Population (N = 469)

Class	Initially Enrolled and Pre-Tested		Dropout		Coenrolled and Eliminated From Study	
	N	%	N	%	N	%
Reading	212	(100.0)	71	(33.5)	26	(12.3)
English	257	(100.0)	103	(40.0)	26	(10.2)

Class	Not Phonetically Disabled and Eliminated from Study		Completed Course and Post-Tested	
	N	%	N	%
Reading	9	(4.2)	106	(50.0)
English	15	(5.8)	113	(44.0)

Results

The mean CPS pre-post test scores of the experimental group were compared (see Table 2) to learn that developmental reading students experienced a mean 3.13 gain, which is statistically significant.

TABLE 2

Comparison of Pre- and Post-Test Scores
for Experimental Group

	N	Mean	SD
Pre-Test	106	54.83	10.53
Post-Test	106	57.96	9.80

t = 2.21 Significant at the .05 level.

But when scores of students in the English classes were treated similarly (see Table 3), statistically significant gains were also achieved, although these students experienced slightly lower (2.86 points) measured mean growth.

TABLE 3

Comparison of Pre- and Post-Test Scores
for Control Groups

	N	Mean	SD
Pre-Test	113	54.06	10.38
Post-Test	113	56.92	9.18

$t = 2.18$ Significant at the .05 level.

Finally, to learn whether the compared performances of these groups were significant, the t-test of two differences statistical technique was employed (see Table 4), yielding a .27 point gain difference in favor of the experimental group but a t-value indicating non-significance.

TABLE 4

Pre- and Post-Test Score Comparison
of Experimental and Control Groups

	N	Mean	SD
Pre-Test, Exp. Gp.	106	54.83	10.53
Post-Test, Exp. Gp.	106	57.96	9.80
Pre-Test, Cont. Gp.	113	54.06	10.38
Post-Test, Cont. Gp.	113	56.92	9.18

$t = 0.025$ Not Significant.

Therefore, this study yields findings contrary to Littrell's. Students completing a developmental reading class do not, when compared to a control group, appreciably reduce their phonic disabilities, at least not in this instance. Nor does a .27 of a point gain difference on a 70 point test appear to be substantial.

Discussion

While a developmental reading course can produce *statistically* significant gains for those students (66.5%) who manage to complete it, is their mean gain (3.13 points) on the CPS very meaningful in terms of overcoming difficulties in phonic analysis? Other research together with this study's findings provides an answer to this question. According to Brown and Cottrell (1), students scoring between 46 and 57 on the CPS are classified as having "serious" phonic disabilities; those scoring between 58 and 69 are classified

as having "some" disablement. Again, the mean CPS pre-test score for students in the experimental group was 54.83, and their mean post-test score was 57.96. This means that the average student upon enrolling in the developmental reading class exhibited "serious" phonic disablement; and upon completing the class, the average student did not escape this classification, although he came within .04 of a point of doing so. Such gain, then, viewed pragmatically, cannot be considered cause for celebration.

Additional data were analyzed to learn that (1) sex, instructional time of day, and duration of course are not factors that influence students' decrease in phonic disabilities and (2) students' degree of phonic disablement is not predictive of success (grade) in a developmental reading course. These findings are consistent with other research on this topic — or issue. (9)

But what about the dropouts, the students who did not survive the course — for whatever reason? The mean entry-level CPS score of students (N=106) completing the developmental reading course was compared with the mean score experienced by the students (N=71) who had dropped the course (see Table 5).

TABLE 5

Comparison of Pre-Test Mean Scores
Of Experimental and Dropout Groups

	N	Mean	SD
Experimental Group	106	54.83	10.53
Dropout Group	71	49.40	11.95

t = 3.10 Significant at the .01 level.

This comparison indicates that the difference in the pre-test scores was significant at the .01 level. Therefore, students' CPS scores are highly predictive of their dropout potential in a developmental reading class. Since the 71 students who dropped the developmental reading classes constituted 33.5 percent of the population initially enrolled, it is apparent that the degree of a students' phonic disablement poses decided implications involving retention, preparation, and curriculum.

Implications

The essential implications yielded and directions suggested by this study are two-fold.

First of all, this study supports substantive research and responsible opinion that has been reported through the past forty years — that, for most students, competency in aural decoding skills is a sub-skill essential and perhaps prerequisite to reading comprehension. (1, 2, 3, 5, 14, 16) Cottrell has

summarized this position succinctly: "Students' ability in phonetic analysis is necessary but not sufficient for reading in the English language." (3:32)

Finally, inasmuch as many students enrolled in college developmental reading courses can be identified as phonically disabled, some accommodation needs to be made to help them eliminate or minimize this deficiency at least in more severe and apparently high risk cases. Otherwise, the instruction implemented in the typical college developmental reading course is not liable to be very effective — if, indeed, the student survives the course. Such does not suggest that college reading practitioners should immediately pursue the notion that instituting "phonic" courses affords a necessarily effective or solitary solution. It does suggest, however, that, until students' aural decoding skills are sufficiently improved, those responsible should continue to reassess their developmental reading programs with constructive dissatisfaction.

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A SURVEY OF LEARNING CENTERS/LABORATORIES IN HAWAII

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Learning assistance is a phenomenon that is growing and becoming of increasing interest nationally as well as in Hawaii (4). Established learning centers/labs have proven to be highly effective as a valuable, timely, and much needed vehicle for developing and enhancing study skills. (1,2)

The success of these centers/labs has made a tremendous impact on Hawaii's institutions of post-secondary education, as evidenced by the establishment of these facilities on individual campuses.

Learning assistance has become a primary concern in Hawaii's community college system, which functions partially as "second chance" educational institutions for those who do not qualify for admission to four-year universities but wish to pursue a college degree or training in a vocational field, and for those returning to school after several years, only to discover that their learning skills have grown rusty. These factors commit the institution to provide learning assistance to the typical student as well as the marginal student.

According to Pellegrino,

The rapid development of these centers (Hawaii) has resulted in growing pains not being satisfactorily met: coordinators are rarely full-time; most centers lack the paraprofessional help to carry on individualized, self-paced instruction; most centers have no budget and/or are attached to a division, etc. (6:7).

The need to organize and coordinate efforts, to survey and consolidate services on individual campuses, and to maximize effective utilization of resources is vital in assisting learners from divergent socioeconomic backgrounds with differing vocational and personal goals (5:5).

Presently, the movement in Hawaii is searching to attain greater recognition and to establish a firm foothold in the educational system. It is analog

ous to that in California, which Devirian, Enright and Smith describe as personifying

an awkward and idealistic adolescent, torn between a clumsy rate of growth and a firm commitment to change the educational system. While searching to find himself, he remains unsure, unsettled and unstaid, but intent upon improving higher education by mixing convention with innovation (3:141).

There is limited documentation on the status of programs/functions on a statewide basis. Although there have been indications of internal development within the respective institutions, attempts at consolidation and providing mutual support have been difficult. This lack of communication has resulted in their ignorance of the programs/functions and procedures being utilized by their colleagues.

In order to gain a more accurate account of the status and development of learning programs/functions in Hawaii, a survey was undertaken in 1977 regarding 1) administration of center/lab, 2) finance and budget, 3) hardware and software, 4) facility, 5) staff, 6) clientele, 7) programs and services, and 8) evaluation.

Procedure

A survey designed by the investigator was distributed to twelve centers/labs at the university and community college levels (seven 2-year institutions and two 4-year institutions). From a total of 12 surveys distributed, 10 were returned — a return rate of 83 percent. The data received from one facility were not utilized because they were based on 1974 information. Therefore, the results were representative of the data received from nine centers/labs.

The data gathering instrument contained 33 items and consisted of fill-in, multiple-choice and short answer questions.

The distribution of the surveys was followed by the investigator's visitations to these facilities for clarification of questions concerning their responses and viewing of physical facilities and materials.

The data were analyzed by the investigator and the results were represented in the form of frequencies and percentages whenever possible. Percentages were based upon the total number responding to each item. Total percentages were shown only when the respondents selected one answer to the item. In instances where more than one answer was necessary or possible, percentage totals were not shown.

The data gathered were set up into tables whenever possible to visually discern the variability or similarity of responses in regards to each particular item. When comparisons of centers/labs were made, a numerical system was utilized to assure the anonymity of each facility.

Results

With respect to learning programs/functions, a number of similarities and differences were revealed. The major similarities are as follows:

1. All post-secondary institutions had one or more learning centers/labs on their campuses and none indicated that there were plans for one in the near future.
2. All centers/labs are administered by the Office of Student Services/Affairs or by instructional services (Academic Affairs).
3. Most of the centers/labs receive(d) both initial and on-going funding for the operation of their facilities through State and Federal sources, rather than Federal or private sources.
4. All facilities indicated that they had paid professional staff.
5. Many of the centers/labs offer programs/courses to students on a credit/no credit basis, but do not offer mini-courses for credit.
6. Most of the centers/labs handle drop-in students.
7. The main mode of evaluation most frequently utilized to determine the effectiveness of services offered to students is a client questionnaire.
8. Although centers/labs differed in the year of their development, they were all established between 1969 and 1977, confirming the youthfulness of the movement.
9. The most frequently utilized form of learning employed the audio-visual modalities — cassette tape, cassette tape/workbook, cassette tape/slide.

Along with the similarities, differences were found among the centers/labs and are as follows:

1. Centers/labs had differing allocated areas in their facilities which were contingent upon availability of space and funds, the demand and need for such services, and the availability of qualified personnel to work in the center.
2. Centers/labs were scattered throughout the campuses in various locations. This was determined by the nature of their services, space available, and the emphasis of learning assistance on individual campuses.
3. The number of personnel and qualified staff differed from one center/lab to another. This can be attributed to availability of space and funds, and the need and demand for such services.
4. All centers/labs did not have job descriptions for all of their personnel.
5. Students' utilization of the centers/labs during a semester differed due to source(s) of referral, availability of space and personnel, purpose and the awareness of the student population of the existence of such facilities.
6. The main sources of student referral were instructors, counselors, and self.
7. A variety of diagnostic instruments were utilized by the centers/labs and differed according to the nature of their services and the student population they served.

8. Attempts have been made to evaluate the effectiveness of software, services, center/lab operation, and the monitoring of client progress by means of a client questionnaire, instructor/facilitator feedback, pretests and posttest and so on.

Discussion

The establishment of learning centers/labs on individual campuses indicates growing recognition and acceptance of the importance of learning assistance in our educational system. The need for such services has been evidenced by students' increasing utilization of such facilities, initiating an awareness among administrators, faculty and staff of the needs and desires of their clientele and their commitment toward self-improvement.

The youthfulness of the learning assistance movement in Hawaii has been evidenced by the relatively recent establishment of learning centers/labs in post-secondary institutions. This has resulted in the diversity of names/functions, reflecting the nature of their services and also their locus of administration, and the differing levels of development due to the availability of space, funds, and professional staff; peer and administrative support of such a new and innovative concept and services; and the need and demand for such services on campuses.

The State has been a greater source of funding rather than Federal or private sources, indicating greater acceptance of learning assistance by the administration and a growing commitment toward the development of learning centers/labs.

Although attempts at evaluation are being made, there appears to be a need for total program evaluation utilizing a more systematic approach in determining the effectiveness of software, services, client progress, and operation of facilities. This is vital in the efforts to improve services, accountability, and for maximizing student utilization of such facilities.

Efforts have also been made to reach out into the academic community in attempts to increase visibility and accessibility through workshops, presentations, and courses/programs. However, greater efforts should also be made to make the non-student population aware of their services.

Although there has been increasing interest and concern in learning assistance, attempts at statewide coordination, program development, and articulation have been difficult. Peer and administrative support and the willingness to share information, ideas, and concerns are necessary for the coordination and facilitation in promoting and recognizing learning assistance. There must be a joint effort and a firm sense of commitment among those involved.

In conclusion, our growing concern for the increased quality of education cannot be denied. Accountability, innovation, flexibility, accessibility, and visibility are vital characteristics in the promotion of learning assistance. Students have begun to accept the responsibility for the education, utilizing a

facility equipped with the necessary personnel, hardware and software. This has become a reality due to the involvement of the learning assistance center/learning center/learning lab, which offers services satisfying the needs and desires of their clientele, while simultaneously maintaining a high quality of education.

As a result of this study, the following recommendations are suggested.

1. A follow-up study should be done to note whether any changes have occurred in Hawaii's learning centers/labs: a) total program evaluation — software, services, student progress, operation of facility; b) sources of student referral; c) diagnostic approaches; d) sources of funding; e) administration of center/lab; f) programs/services/functions.
2. Efforts should be made to explore the possibility of utilizing volunteers from the community (individuals on sabbatical, spouses of faculty members, senior citizens versed in study skills/content areas) and interns in master's degree programs.
3. The possibility of an exchange program between professional staff members of other centers/labs on the mainland is suggested.
4. Efforts to make the student population aware of their services through workshops, presentations, and courses/programs should be continued. Further visibility and accessibility of services through freshman orientation programs and classroom and dormitory presentations or other means is suggested.
5. Statewide effort in the coordination and articulation among centers/labs is recommended for the recognition and promotion of learning assistance as well as for the sharing of information and ideas for growth and innovation.
6. Continued professional growth is suggested through inservice workshops, visitations to other learning centers/labs on the mainland, guest speakers, and contacts with professional organizations.

It is hoped that the findings of this study will initiate further investigations and a realization of the importance and necessity for statewide coordination and articulation of learning assistance.

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A SUMMER "HYPE" FOR HIGH RISK READERS

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The problem of student attrition has become an important issue in institutions of higher education. Study after study tells us that rising attrition rates are due in part to the increasing number of students who enter these institutions ill-prepared to meet the academic challenges that await them. The loss of students is costly to an institution, and concerned educators are looking with renewed interest at support programs designed to help these students achieve success in their academic careers.

UCLA, like many other institutions, is attempting to reach ill-prepared entering students before they begin their regular academic programs. Special Freshman Summer Programs (F.S.P.) are designed to help inadequately prepared students develop the skills they will need to succeed in their university courses. During Summer 1978, the Learning Skills Center participated in an intensive six week Freshman Summer English Program. The Learning Skills Center staff conducted the reading component of the program while the writing component was conducted by a temporary F.S.P. staff. Students did not earn credit for F.S.P., but they might fulfill one of their university English requirements by passing the Subject A Examination at the end of the program.

This paper describes the students who enrolled in the program, gives an overview of the goals and content of the reading component, presents data regarding the effectiveness of the program, and offers recommendations to those planning similar programs.

Student population

Students satisfying the UCLA admission requirements based on their high school grade point averages, but scoring below 450 on the CEEB English Composition Achievement Test were invited to enroll in the program. The over-all responsibility for F.S.P. was assigned to the Academic Advancement

Program, a student affirmative action program, which explains why all students enrolled in the program were A.A.P. students. The ethnic identity and sex of the students is shown in Table I. Almost 90% of the students were from minority groups; the sexes were equally divided. The students were randomly divided into six sections with approximately 20 students in each group.

TABLE I

Distribution of Students by
Ethnicity, Sex, and ESL

Ethnicity Categories	Male	Female	Total	%	ESL
Asian	23	9	32	28.8	14
Black	11	24	35	31.5	0
Other Non-White	2	2	4	3.6	2
Hispanic	13	18	31	27.9	5
Other White	7	2	9	8.2	1
Total	56	55	111	100	22

The program was not designed for students for whom English is a second language, but we discovered that 22 students with foreign language backgrounds were enrolled. Table I shows the distribution of these students by ethnicity.

Description of reading component content

The goals of the reading program were both cognitive and affective and were determined by the anticipated nature and needs of the students. Not only was it important that the students attain the level of skill requisite for reading university texts, but it was equally important that they gain confidence in their reading abilities. Because of this, it was necessary to provide a supportive atmosphere that would sustain the morale of these newly admitted students.

The objectives of the program were:

1. to heighten the students' awareness of the level and kind of reading required at the university;
2. to focus the students' attention on their need to improve present reading skills and to learn to use reading as a primary tool for the acquisition of information and knowledge;
3. to provide a means for improving the students' present reading skills.

Twenty-four one and one-half hour sessions were devoted to teaching strategies for purposeful and accurate reading. The program concentrated on reading per se and included a variation of SQ3R. Students received instruction in four major areas of reading: sentence and paragraph reading, SQ3R, critical reading, and rapid reading. Instruction moved from sentence and paragraph reading to reading longer passages; from literal to critical reading. Finally, the variable of time was added to enable the students to learn how to process written information efficiently.

Effectiveness of program

Several measures were used to evaluate the effectiveness of the reading program: the *Nelson-Denny Reading Test*, Form A and B; the *Miller Reading Efficiency Tests*; the students' self-evaluation of reading skills and strategies. Unfortunately, a misunderstanding about the directions given for the pre and posttest administration of the *Reading Efficiency Tests* invalidated the results, and leaves only the Nelson-Denny and the students' self-reports on which to base our evaluation of the outcomes of the reading component.

The *Nelson-Denny Reading Test*, Form B was administered as a pre-test of students' reading ability. Form A was used at the end of the program to determine gains. A comparison of the pre and posttest (Table II) reveals that the differences between the mean scores were statistically significant. The small gain in vocabulary, significant at the .05 level, was probably due to the large amount of reading the students did during the six week program and the informal assistance they received with vocabulary. No directed vocabulary work was included in the program. The comparison of comprehension scores reveals a mean difference of 4.84 points which is significant at the .0005 level. Students made high gains in rate of reading. The mean difference of 133.33 points is significant at the .0005 level. It is possible the gains are a result of the rate unit's position in the program. However, it is equally possible that the gains in rate were due to improved strategies for reading.

TABLE II
Comparison of the Nelson-Denny Pretest
and Posttest Scores

	Pretest-Form B			Posttest-Form A			statistics	
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	t	p =
Vocabulary	111	25.22	7.84	111	27.59	9.04	2.09	< .05
Comprehension	111	27.98	8.91	111	33.60	8.34	4.84	<.0005
Total Reading	111	52.88	14.67	111	60.66	15.65	3.82	<.0005
Rate	89*	213.25	73.78	103*	346.58	106.84	9.91	<.0005

*Students did not mark rate

These findings show that the students improved significantly during the six weeks, but must continue to progress in order to handle the reading requirements of a full academic program.

Students were asked to evaluate their own reading situation before beginning the program and after completing it. The responses to some of the items are of particular interest. On the Initial Evaluation, students were asked to list the skills they needed to improve and to estimate how much they thought they needed to improve each skill. Skills such as grammar, spelling, study, note-taking, and concentration were listed by some students, but the most frequently listed skills were comprehension, vocabulary, and speed. Using a Need to Improve Scale of 1 to 5 (a small amount to an enormous amount), 77 students listed comprehension with a mean of 3.38 on the Need to Improve Scale; 68 students listed vocabulary with a mean of 3.37; 66 students listed speed with a mean of 3.44. On the Final Evaluation, students expressed a strong need for vocabulary development. The lack of directed work in vocabulary development in either the reading or writing component of this program was unfortunate.

Another item of interest appeared on both the Initial and Final Evaluations. Students were asked to assess their own competencies in three aspects of reading comprehension and to rate themselves on a scale of 1 to 5 (not competent at all to competent at all times). Sentence analysis includes recognizing core elements, pronoun references, and the ability to understand complicated sentences. Paragraph analysis includes recognizing levels of importance, locating topic sentences, recognizing supporting ideas, and identifying signal words and phrases. Critical reading includes drawing inferences, differentiating fact from opinion, and recognizing author's bias. A comparison of the mean difference of the students' self-report on the Initial and Final Evaluation shows a gain in all areas at the statistically significant .0005 level. Table III presents this data.

TABLE III

Students' Self Assessment of Reading Competencies

	Pretest-Form B			Posttest-Form A			Statistic	
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	t	p =
Sentence Analysis	108	3.32	.89	99	3.91	.83	6.18	.0005
Paragraph Analysis	108	3.14	.85	99	3.81	.71	5.06	.0005
Critical Reading	108	2.79	.63	99	3.46	.81	6.71	.0005

Table IV presents the data from the question designed to assess the effect of the program on students' reading behavior. Students were asked to rate the skills they were currently using on a scale of 1 to 5 (never to frequently). It appears that the program helped students change some of their reading behaviors. As the data shows, students reported a statistically significant rise in their use of survey, scanning, and rapid reading skills. It appears that they were not using the overviewing or summarizing skills that were taught in the program.

TABLE IV
Students' Self Assessment of Use of Reading Strategies

	Initial Evaluation			Final Evaluation			Statistic	
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	t	p =
Survey	103	1.93	1.31	93	3.65	1.07	10.12	.0005
Skimming	103	3.04	1.25	93	3.66	1.06	3.76	.0005
Scanning	103	2.69	1.14	93	3.58	1.09	5.63	.0005
Overview	103	2.43	1.20	93	2.57	1.19	.83	Not
Summary	103	3.18	1.14	93	3.10	1.28	.47	Not
Rapid	103	2.33	1.08	93	2.91	1.14	3.70	.0005
Card Pacing	103	1.65	.93	93	2.18	1.14	3.60	.0005
Hand Pacing	103	2.17	1.31	93	2.89	1.43	4.90	.0005

In general, the students found the program useful, but they indicated that it would have been more effective if it were connected to a regular course. Some students reported that the materials were not interesting to them. In addition, some stated that it was difficult to sustain motivation to learn how to read in the absence of the usual rewards of a grade and credit.

Recommendations for future programs

1. The reading program should be offered to students who are concurrently enrolled in subject matter courses so there can be immediate and direct application of the skills taught. Too often, reading programs like this seem irrelevant to students because there is no immediate need for the skills.
2. The program would be most effective if students entered it after a quarter of academic work during which they had an opportunity to become aware of their own reading deficiencies.
3. The program should offer individualized attention to each student. This

can be accomplished in one or a combination of several ways: plan an individualized program of skill development for each student based on diagnostic information and self report; plan group instruction with frequent individualized follow-up; assign students to ability level groups based on diagnostic information to achieve as much homogeneity as possible.

4. The program should include intensive work based on individual needs in vocabulary development.
5. Students for whom English is a second language and native speakers of English should not be enrolled in the same program because their needs are different.
6. Every effort should be made to emphasize that reading is a tool for learning and all instruction should evolve from this goal. It is apparent that most good students with poor reading profiles are accustomed to obtaining information by methods other than reading, e.g. experience, observation, lectures.
7. It should be stressed from the beginning and made clear to the students that crash programs are only a first step in preparing them to handle the reading requirements of a full academic program. If they are to achieve academic excellence, they must participate in additional developmental reading programs. This means, of course, that additional programs need to be offered.
8. Thorough diagnosis of reading skills is essential to enable the program designers to meet the individual needs of these high risk students.
9. Give credit.

ARE ORAL READING TESTS FAIR TO BLACK STUDENTS?

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Labov (6) has offered data that Black students are not linguistically deprived or deficient in language and Baratz (1) says they often can and do "speak a well-ordered highly structured language system which in many aspects is different from Standard English." Labov and Baratz both speculate that reading teachers have been attempting to teach these students to read in a language that is different from their spoken language.

Wolfram (8) examined several teaching methods that intended to eliminate the certain effect of dialect differences in the acquisition of reading skills. He also suggests acceptance of dialect equivalents or translations of conventional-standard English reading materials. Hunt (4) saw reading tests alone as inadequate because in diagnosing and evaluating the students, it is necessary to understand the effect of dialect on the score. The test score acts as a ranking and/or grouping device. Labov (5) found students who had the highest incidence of dropping final sounds "seem to have the most serious reading problems of all." Trudgill (7) found dropping of final sounds a characteristic of Black English variation (BEV) and also White non-standard English. Hunt (4) saw the possibility that a dialect speaker who reads well with some degree of fluency is translating as he reads.

The present experiment was conducted to examine the difference between oral and silent reading tests scores and to see if a possible bias exists that penalizes Black speakers.

Method

Subjects

The Subjects (Ss) were seventeen students currently enrolled (Spring 1979) in an English 320-Improvement of Reading class at San Jose City College. The Ss were made up of eleven males and six females.

Materials

The materials used for this experiment were two reading tests. They were the *California Achievement Test*; Form B (CAT) and the *Diagnostic Reading Scales*; Revised Edition (SPACHE).

For the CAT a booklet and test form designed for it was used. Answers were marked with a number two pencil. For the SPACHE, the Test Book and Examiner's Record Booklet were used.

The Experimentor (E) had a set of standardized instructions for each of these tests and used a stop watch for timing the CAT.

Design

The subjects' tasks in this experiment were to read and answer questions on the reading tests. The CAT was a silent reading test. The Ss read and answered questions. The S was allowed to re-read and refer back to reading selections to answer questions. The SPACHE was an oral reading test and Ss were asked questions at the end of each reading. The Ss were not allowed to re-read or see the reading selection during the question and answer sequence.

Procedure

The CAT was given in classroom surroundings. It was given in two parts. The Vocabulary Test was timed at ten minutes and the Comprehension Test was time at forty minutes. The E read a set of standardized instructions for each test. One minute before the time limit expired, a one minute warning was given for the Vocabulary Test and three minutes before the time limit expired, a three minute warning was given for the Comprehension Test.

The SPACHE Test was run in quiet surroundings chosen by the E. A barrier was set up by the E so the S would not see the notations made by the E. The Examiner's Record Booklet, a pencil and data sheets were arranged on the E's side of the barrier. The same set of instructions were given to each S. The E re-stated any instructions if the S had any questions. The S was told to read the selection and at the end of the selections to close the booklet and he would be asked questions. The S was instructed to read the selection aloud. Eleven reading selections were used. 1A was used as the initial reading selection with the S stopping at this selection or moving up to the next highest reading selection; this was dependent on the results of the comprehension questions at the end of the initial reading selection or if the total number of oral errors exceeded the standard. Errors were considered in four main categories for the oral reading selections: Omissions, Additions, Substitutions or Mispronunciations and Repetitions. Dialectal mispronunciations were not counted as errors. When the S finished each oral selection, relevant comprehension questions were asked. Testing was stopped when the total number of errors exceeded the standard cutting score.

Results

The mean for the CAT was 9.15. Scores for the Vocabulary and Comprehension sections were reported as one score. The mean grade level for the

SPACHE was 5.21. The mode was 5.5. The range was 1.9 to 8.5. The mean for comprehension was 60%. The range was 0% to 100%. Test scores in all cases but two went down. (See Figure 1.)

FIGURE 1

Ss	+ -	CAT	SPACHE	
			GRADE LEVEL	COMPRE- HENSION
FLA3	-6.7	13.2	6.5	80%
MTB1	-2.4	5.7	3.3	100%
MCB2	-4.9	8.7	3.8	100%
MGD3	-5.2	10.7	5.5	100%
MQE3	-5.1	10.6	5.5	100%
FDG3	-5.1	10.6	5.5	60%
MKH2	-4.2	9.7	5.5	100%
MAL1	+1.8	5.7	7.5	80%
FLM3	-3.0	11.5	8.5	80%
FRM3	-5.8	10.3	4.5	100%
MVP1	+1	2.7	2.8	0%
MWO1	-2.3	4.1	1.8	100%
MKR3	-2.3	7.8	5.5	100%
FLR3	-5.8	11.3	5.5	60%
FMS3	-4.0	12.5	8.5	60%
MWS2	-5.3	9.8	4.5	100%
MEW3	-6.9	10.7	3.8	100%
MEAN	-3.94	9.15	5.21	60%

Discussion

The present experiment was conducted to examine the difference between oral and silent reading scores and to see if a possible bias exists that penalizes Black speakers. Are oral reading tests fair to Black students? No.

The present experiment shows a mean different of -3.94 grade levels on an oral reading test in comparison to a silent reading test. The main reason why the SPACHE, an oral reading test is unfair to Black students lies with the error that penalizes the Ss most frequently — the category of omission. According to directions, dialectal pronunciation is allowed but this is contradicted in the category of omission. By definition an error of omission is a "part of a word, or group of words omitted. Omission of part of a word or word group counts as one error." Trudgill (7) states that a type of Black English Variation (BEV) is the omission of -s in third person singular. He also states that some forms of Standard English such as eating and drinking are not only

changed in BEV out also White non-standard English to catin' and drinkin'. These two types of omission are considered to be part of dialect, yet according to the SPACHE these are counted as errors. (See Figure Two.)

FIGURE 2

Ss	final reading selection	final sounds dropped, # of errors	other omission errors	repeated with correction, # of errors	words added, # of errors	substitutions, # of errors	mispronunciations	total # of errors	+ # of errors from standard	testing stopped due to errors	testing stopped due to comprehension score
FLA3	6.5			1	2			3	-10		*
MTB1	3.3	8		5	2	5		20	+8	*	
MCB2	3.8	12				1		13	+4	*	
MGD3	5.5	3	4	5	2	1		15	+1	*	
MQE3	5.5	6	2	6	2	3	1	20	+6	*	
FDG3	5.5	3	1	3				7	-7	*	
MKH2	5.5	7	4	5	1	3		20	+6	*	
MAL1	7.5	18	1			1		20	+6	*	
FLM3	8.5			1	1	1	1	4	-8		*
FRM3	4.5	7	2	3		2		14	+4	*	
MVP1	2.8	2				1		3	-7		*
MWO1	1.8	9		3	5			17	+5	*	
MKR3	5.5	15	2		2	2		20	+6	*	
FLR3	5.5		1	4	1	2		8	-6		*
FMS3	8.5		1			2	1	4	-8		*
MWS2	4.5	7		1	3	3		14	+4	*	
MEW3	3.8	8					2	10	+1	*	

In all but four cases, errors were made in dropping of final sounds. In the four exceptions, two Ss-FLR3 and FMS3 read the test with precise pronunciation which is contrary to speech pattern used with peers. Two Ss-FLA3 and

FLM3 spoke with precise pronunciation which was not a contradiction to speech pattern.

A variable that cannot be controlled is nervousness. All Ss commented on reading aloud and what it has meant to them. This may indirectly affect the results. Types of errors due to nervousness can be in the category of repeated with or without a correction. The E detected very little visible nervousness, such as shaking. The Ss did not always repeat and correct a word from which a final sound had been dropped. Unexpected findings were that some Ss pronounced "Fredericksburg," "Frederickburg." Subjects also would tell the selection back as a story to the E when asked questions. These Ss also answered questions more particular or specific than the general answer provided. This was counted as one error. Subjects with the highest incidence of dropping final sounds often answered in dialect "be" form and or in dropping final sounds. In two cases, Ss read the selection with intonation and stress.

Summary

This experiment was conducted to see if oral reading tests are fair to Black students. There were 17 Ss and, in all cases except two, their scores were lower on the oral reading test. Ss were penalized 2.3 to 6.9 grades because of oral errors. This is a penalty due to speech patterns or dialect. A conclusion that can be reached from this experiment is that, in diagnosing a student's reading for proper placement in a reading group, it is important to distinguish the types of errors in reading. Errors that stem from difficulty with the testing materials and "errors" that reflect elements of Black dialect.

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THE USE OF THE ENGLISH PLACEMENT TEST: READING IN DEVELOPING A COLLEGE READING PROGRAM AT CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

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Since World War II, the trend of the older student returning to college, the recruitment of minority and economic opportunity students, and the recruitment of special populations such as the deaf and the handicapped, have created an open door policy in admissions to the four year colleges. This open admissions policy has changed the academic profile of the student population. Many of these students arrive on the campus without adequate writing and reading skills for successful college work. It is not uncommon to find these students reading on an eighth grade level. The four year college should respond to the new students' needs by providing new and appropriate courses in writing and reading for credit. A supportive environment for these new students would tend to retain them in the four year educational program.

The Learning Resource Center (LRC) and the University Reading Clinic (URC) at California State University, Northridge, provide a voluntary tutorial support service in reading and writing for the university student. Unit credit is not given to the student for this service. However a one unit adjunct writing course, English 194A, is offered to students whose writing score on the *English Placement Test (EPT)* falls below 150. This course is held in the LRC. The university has no comparable course in reading. Therefore, the University Reading Clinic and the LRC proposed and received an Instructional Improvement mini-grant for a joint pilot project to study the relationship between reading and writing scores on the *EPT* and to design and conduct workshops in reading to gather data for developing future college reading improvement courses.

Purpose and objectives of the pilot project

The purpose of this paper is to present the findings of the four objectives of the pilot project. Four objectives and two research questions were formulated for the project:

1. To administer standardized screening and diagnostic reading tests to further assess reading strengths and weaknesses of the individual students enrolled in English 194A.
2. To compare these scores with the reading scores obtained on the *English Placement Test*, and to ascertain the percentage of students who could benefit from reading instruction given simultaneously with written instruction.
3. To design an individualized developmental reading program based on the findings of the first objective.
4. To conduct non-credit workshops offered in the LRC and URC which will carry out the individualized developmental reading program designed in objective three.

Two research questions were formulated to measure objective two and objective four, respectively:

1. Do students who score at or below 150 on the *English Placement Test: Reading (EPT:R)* also score at or below the 50th percentile on the *McGraw Hill Basic Skills System: Reading III (MHBSS:RIII)*?
2. Is there a significant difference between the raw scores on a pretest and the raw scores on a posttest on a reading assessment after 30 hours of reading instruction?

Findings of the four objectives

The following information demonstrates how the four objectives of the pilot project were met. Objectives one and two focus on administering standardized screening and diagnostic tests and comparing these scores with scores on the *EPT*. Objectives three and four focus on the developmental reading program which was designed for use in the non-credit workshops. The evaluation of each objective is treated separately within each of the four objectives as they are discussed.

The evaluation instruments

The test instruments used to achieve the first two objectives and measure reading growth in objective four were the *English Placement Test: Reading (EPT:R)* (3) and the *McGraw-Hill Basic Skills System: Reading III (MHBSS:RIII)* (2). These two assessments measure some of the same factors: (1) recognizing main ideas and (2) recognizing specific facts which may be subsumed in interpreting ideas stated directly and indirectly in a passage. The other areas of skills sampled by each test seem to have little overlap and can be assumed to be different skills. The *EPT:R* is a screening test of general reading comprehension and word meaning. A reading score of 150 or below has been suggested by Educational Testing Service (3) as an indicator for further work in reading. The *MHBSS:RIII* is a diagnostic reading test giving

specific scores for each of the five skill areas. An overall score below the 50th percentile would indicate need for further instruction in reading.

The subjects for the pilot project

The subjects for the study of the relationship between reading and writing scores on the *EPT* and the *MHBSS:RIII* were entering freshmen in English 194A, a supplementary adjunct writing course. These students had been advised to enroll in this writing course on the basis of an unacceptable score of 150 or below on the *EPT* or an unacceptable score on the In-Class Essay. The subjects for the Reading Workshop were voluntary students from all class levels. The criterion score for acceptance into the Reading Workshop was a score below the 50th percentile on the *MHBSS:RIII*.

Objective one

In August 1977, October 1977, and May 1978, the *EPT* was administered to the freshman class. Not all freshmen took the *EPT* by May 1978. As indicated in Table I, only 195 students out of the 381 students enrolled in English 194A had taken the *EPT*. The 86 students who did not take the *EPT* were advised on the basis of a score on an In-Class Essay in English 155 to take the adjunct writing supplement course. As a result of this testing program, only 163 students took both the *EPT* and the *MHBSS:RIII*. Table I summarizes this information.

TABLE I

Summary of English 194A Students Who Took the *EPT:R*
and the *MHBSS:RIII*, Academic Year 1977-1978

	Number of Students			
	English 194A	<i>EPT:R</i>	<i>MHBSS:RIII</i>	<i>EPT:R</i> and <i>MHBSS:RIII</i>
Fall	212	127	144	100
Spring	169	68	123	63
Total	381	195	267	163
Total expressed in percentage of enrollment in 194A		51%	70%	42%

Objective two

The purpose of comparing the reading scores on the *EPT:R* with the reading scores on the *MHBSS:RIII* was to ascertain the utility of using the *EPT:R* scores as a screening device for further diagnostic assessment of reading strengths and weaknesses by the *MHBSS:RIII*. The following re-

search question and sub-questions were asked to ascertain the utility of the use of the *EPT:R* for this purpose. The criterion scores of 150 on the *EPT:R*, and the 50th percentile on the *MHBSS:RIII* were selected for research purposes (1, 2).

Research question one: Do students who score at or below 150 on the *EPT:R* also score at or below the 50th percentile on the *MHBSS:RIII*?

- a. If not, what percentage of students fall at or below 150 on the *EPT:R* and also score at or below the 50th percentile on the *MHBSS:RIII*?
- b. What percent of students fall at or below 150 on the *EPT:R* and above the 50th percentile on the *MHBSS:RIII*?
- c. What percent of students fall above 150 on the *EPT:R* and above the 50th percentile on the *MHBSS:RIII*?
- d. What percent of students fall above 150 on the *EPT:R* and below the 50th percentile on the *MHBSS:RIII*?

Table 11 summarizes the following information which answers the research questions and subquestions related to objective two. Only the total number of students who took the *EPT:R* and the *MHBSS:RIII* for the academic year 1977-78 are included in Table II.

Relationship between reading and writing. The relationship between reading and writing is demonstrated by the relationship between the various criterion scores students in English 194 have received on the composite score for the Writing on the *EPT* and the *EPT:R*, and the *MHBSS:RIII*. From the information presented in Table II, one could infer that 28 percent of the students involved in supplementary writing courses (e.g., English 194A) do not need to be involved in supplementary reading improvement courses. However, one could infer that 60 percent of the students involved in the supplementary writing courses could benefit from supplementary reading courses.

Relationship between EPT:R and MHBSS:RIII with English 155 grades. A correlational study was conducted by Michaels and Schaeffer (1) between the relationship of the *EPT:Reading* score and the *MHBSS:RIII* reading score and their effectiveness as predictor measures for English 155 grades. Ninety-four (94) students took both the *EPT:R* and the *MHBSS:RIII*. The correlation between these two predictors was .55, which would indicate that these two assessments measure some of the same factors in reading.

However the correlation between *EPT:R* score as a predictor measure and English 155 grades was .37. It was significant at the .01 level. There were 637 students in the sample.

The correlation between *MHBSS:RIII* score on the predictor measure and the English 155 grade was .26. This was not significant at the .01 level. There were 94 students in the sample. Perhaps if the sample had been larger the correlation between these two factors would have been greater.

TABLE II

Summary of Research Question One
and Subquestions a, b, c, and d

	Fall	Spring	Total
Number of students <i>EPT:R</i> and <i>MBHSS:RIII</i>	100	63	163
Question One, Subquestion a: Number of students below 150 on <i>EPT:R</i> and 50th percentile on <i>MBHSS:RIII</i>	39	33	72
Percent of students below criterion score on both tests	39%	53%	44%
Question One, Subquestion b: Number of students above 150 on <i>EPT:R</i> and below 50th percentile on <i>MBHSS:RIII</i>	12	3	15
Percent of students above 150 on <i>EPT:R</i> and below 50th percentile on <i>MBHSS:RIII</i>	12%	4.7%	10%
Question One, Subquestion c: Number of students below 150 on <i>EPT:R</i> and below 50th percentile on <i>MBHSS:RIII</i>	16	14	30
Percent of students below 150 on <i>EPT:R</i> and below 50th percentile on <i>MBHSS:RIII</i>	16%	22%	18%
Question One, Subquestion d: Number of students above both criterion scores on <i>EPT:R</i> and <i>MBHSS:RIII</i>	33	13	46
Percent of students above both criterion scores on <i>EPT:R</i> and <i>MBHSS:RIII</i>	33%	20%	28%

TABLE III

University Student Reading Growth
Two-tail *t*-Test Difference of Means

Number	df	Pretest Mean	Posttest Mean	<i>t</i>
37	36	16.76	18.37	2.49*

* $p < .05$

The question concerning the significance of reading growth in a developmental reading program at the college level is answered positively. There is a significant difference between the pretest and posttest scores on a reading test at the .05 level.

Summary

This study was concerned only with students enrolled in English 194A and students who were involved in the Reading Workshops. The findings cannot be generalized to other students in the CSUC system.

In the academic year 1977-78, 381 students were enrolled in English 194A. Only 42 percent of the 381 students took both the *EPT:R* and the *MHBSS:RIII*. The correlation between the *EPT:R* and the *MHBSS:RIII* was .55. This coefficient indicated a strong correlation between the two assessments. Both assessments measured some factors common to both tests. As a predictor of English 155 grades, the *EPT:R* measure was significantly related at the .01 level; the *MHBSS:RIII* was not significantly related at the .01 level. This may be accounted for by the size of each sample.

When analyzing the findings of subquestions a and c, one finds that 55 percent of the students fell below the criterion scores of 150 on the *EPT:R* and the 50th percentile on the *MHBSS:RIII*. This finding indicates that 60 percent of the students enrolled in the English 194A course had some reading weaknesses and could profit from additional instruction in reading development. The remaining 38 percent (subquestions b and d) of the students, although involved in a writing improvement course, would not necessarily need to be involved in reading improvement instruction.

The outcome of the three Reading Workshops indicated that, with specialized instruction in reading, students will significantly improve their reading score on a standardized reading assessment. Hopefully these students will transfer the learning which took place in the workshops to other academic fields. The workshops also afforded the instructors the opportunity to use small group-large group, self-paced learning within the setting of the University Reading Clinic and the Learning Resource Center which could

lead to the development of new courses in reading improvement in content areas for the students in these times of open admissions.

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INstantiation: ONE DIFFERENCE BETWEEN ADULTS AND CHILDREN WHEN READING

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The primary word is not a straightforward symbol for a concept but rather an image, a picture, a mental sketch of a concept, a short tale about it — indeed, a small work of art.

—J. S. Vygotsky

Reading must, with great flexibility but within certain parameters, follow predictable forms and confirm a reader's expectations, establishing a relationship between the reader's stock of facts about the world and the reality presented in the text. In this rather simple experiment, I put a set of four stories that were written by second graders before another group of children the same age and a group of college students. After each group had read a story, I asked them to respond to questions about the characters, the plot, the theme, the action — all designed to indicate the kind of sense they had made of the text. Focusing on their choices in situations where instantiation seemed necessary for comprehension, I have compared the responses of the children and the adults. Where high readers and low readers made significantly different sense of the same text, I have tried to indicate possible reasons and isolate the mental behavior that affected meaning for them.

Procedure

Following Vygotsky's (4) method of unit analysis, I centered on instantiation because it retains all of the basic properties of the reading process, and does not break psychological wholes into elements, ignoring the unitary nature of their function, whereby a whole equals more than the sum of its parts. As defined by Spiro et al. (5:18) *instantiation* is a process in which the meaning of the word (as in the "primary word") is

articulated in a process of inferential interpolation based on knowledge of the world. Usually the scope of reference is constrained to a

subset of the cases that otherwise might be denoted, or even to a single real or imagined case.

To instantiate, a reader must very often perform a number of mental tasks other than merely correlating the word with a concept. Commonly, he relates the word(s) to a larger frame of reference and brings his own knowledge to the text — inferring the motivations of characters because they react like people he knows or can imagine, or selecting the meaning of a word that would fit in the context.

In response to Vygotsky's critical remarks on his early books, Piaget (3) discusses the issue of adaptive effort necessary for the progress of knowledge, whereby knowledge progresses not by mere accumulation, but by a kind of analysis and assimilation. Piaget (3) cites two limitations to this adaptive effort: the person may not have the means to adapt, or the state of equilibrium between assimilation and accommodation may create systematic errors in the adaptive effort. Crucial to the person's adaptive effort is the ability to *decenter*. Decentering is the ability to shift mental perspective, as in seeing an author's intention or a character's motivation. The lack of decentering leads to a debilitating kind of egocentrism in which knowledge cannot progress. (3:2)

In my analysis of the data presented here, I suggest some reasons for systematic differences in comprehension in terms of incongruities of text and reader's point of view that make instantiation impossible.

Results

When I asked the readers the kind of questions teachers usually ask about stories, pure recall questions, most of our readers performed these functions well without much variance between the good readers and the poor ones, or between the adults and the children. In addition, I asked questions designed to get at the instantiations readers make in order to understand the story, to derive notions of what the story was about and the reasons for its outcome, and to perceive the author's intentions.

From the responses to such questions, I have isolated three areas in which instantiation affects meaning, and I have labelled these according to the relationship between the text and reader-knowledge: literal, inferential, and interpretative. (See chart.)

Though I do not have the space here to pursue all the interesting vagaries of thought and provide supporting reconstructions of readers' instantiations in each case, I can provide one illustrative example that spans each area.

For one of the stories, "The Golden Horn," I asked the readers how the hero in it changes. In their answers, the subjects selected one of three choices.

Change is: (choices)	interpolation	children's response			adults
		total	high	low	
little to big	literal	19	7	1	12
scared to brave	symbolic	7	1	1	16
bad to good	general outcome	3	0	1	0

In the text, the first two may be found in the beginning and end of the story.

[Opening sentences] Once upon a time I woke up and I was only as big as a caterpillar. Everything looked big. I felt sort of scared.

[Closing sentences] . . . I came out of my hiding place and said, "I can beat you any time!" Then I became as big as the giant and the fiant [sic] became as small as I was. I beat him and that was the end of the giant.

Between these points, the child-hero runs from the sound of the giant, finds a kind of security in the giant's wife, then needs to defend himself. Changes in self-image which are represented in size and in fortitude take place through these descriptive actions. The change in size reflects the giant (fear) becoming small as the child (his self-assurance) becomes large. Thus, when asking the reader to choose between the two answers to tell how the boy changes, I was in effect asking the reader to choose between a literal response, in which only the stated plot is related, and an interpretation that infers from the literal a symbolic change. The change from bad to good reflects a very general influence (it's good if you think the outcome is good).

This question bridges the boundary between the literal and the inferential areas. When the reader chooses the little to big description, he is being literal. However, when the reader answers with the scared to brave answer, he has moved into the inferential if he has related the hero's feelings to his own and into the interpretative if he has related to the use of size as a conventional symbol.

When the child reading the story identifies with the child-hero; he will very likely experience that kind of regenerative feeling described by Bruno Bettelheim (1) in "The Uses of Enchantment." To understand the size change as symbolic rather than real requires that

the child who is familiar with fairy tales understands that they speak to him in the language of symbols, not that of reality. The fairy tale conveys from its first words, throughout its plot and by its ending that the things he is being told about are not tangible facts or real persons and places. (1:64)

Children may not connect the change in size with the change in self-image as the child overcomes his fear. Though they may intuitively sense it in their reading, they may not decenter when reading or answering the question. The adult and the child who is more familiar with fairy tales have the ability to shift his perspective. His world view of such literary manifestations encompasses the knowledge that lets one know that the change in size depicts the elimination of fear. Performing a bit of analysis of self and story, he cooperates with the question in a very sophisticated manner when he chooses the symbolic change over the literal.

Conclusions and implication

As I've indicated on the chart, the way in which "language in context is problematic in reading" (2:130) and understanding stories will have a great deal to do with mismatches in the relationship of reader to the text, relevant to the reader's view of the world. This experiment ought to be repeated to see whether the pattern of responses continues to hold, with other readers, other stories, and other questions. These tentative percentages certainly need to be verified and subjected to statistical analysis. Also, a researcher should have extensive interviews with respondents about the answers to the questions they chose, the reasons and the sense behind them.

In addition, I would hope that teachers, having daily contact with readers, would be doing this kind of thing in an informal but increasingly organized way. Readers may know the words in what they read, but be unable to see the primary word as anything more than a blurred image, a sketch with lines that don't connect, a tale without coherence — in short, a flawed word of art.

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Types of Instantiation

Literal

Definition: Relationship of the *word* to other words within the story.

Task: Connect the *word* with concept in context of the story.

Questions: What is the story about? (theme)

Ways Language in Context is Problematic: Adaptive effort—inability to decenter.

Inferential

Definition: Relationship of the *word* to the reader's own experience.

Task: Connect the unstated elements in the text with experience; flesh out story's context in accordance with clues in text.

Questions: How much does the father like Chikoie? (character) How does the little boy in this story change? (character/plot)

Ways Language in Context is Problematic: Stall—unable to predict because reader's facts about the (real) world are not related to the information in text. Gap—language facts reader knows in speaking are unconnected with reading.

Interpretative

Definition: Relationship of *word* to the reading experience with the story or myth's conventions.

Task: Connect story with archetypes; see the *word* as a literary convention.

Questions: What would the inventor soon find out? (character/plot) Did the inventor get what he deserved? (theme) Does the volcano change the world when it erupts? (plot)

Ways Language in Context is Problematic: Stall—unable to predict because reader's facts about the (story) world are insufficient or untrained.

Conflict—facts about the world according to the text do not match facts about the world according to reader; writing not good enough to suspend disbelief and get reader into author's world.

Note: The *word* refers to a unit, in the sense of Vygotsky's primary word, a unit containing all the elements of communication in a manageable size.

LOCUS OF CONTROL: AN IMPORTANT STUDENT VARIABLE IN THE COLLEGE LEARNING CENTER?

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Browsing through the self-improvement section of a local bookstore may seem an unlikely provocation for pondering the question of man's control of his destiny. The shelves hold paperback after paperback of recent publications revealing ways that people may become successful and put direction into their lives. Titles include *How to Take Charge of Your Life*; *The Magic of Self Direction*; *If You Don't Know Where You're Going, You'll Probably End up Somewhere Else*; *You Can Rewrite Your Life*; and *Success Through a Positive Mental Outlook*. Why are we experiencing such interest in learning ways to gain control of our lives? Why are people crowding into success seminars with similar titles? And is there a relationship between this movement toward self-direction and the work that we are doing in college learning centers?

One may only speculate as to the reasons for the great interest today in self-discovery and self-direction. Rollo May (12:25) has provided a possible explanation through what he has called "modern man's loss of significance": "In a period of transition, when old values are empty and traditional mores no longer viable, the individual experiences a particular difficulty in finding himself in his world." May (11:22) has used the term "inner vacuousness" to describe the end result of people's conviction that they cannot direct their own lives.

Locus of control research

The control construct

Because a major goal of many college learning centers is to assist students in achieving self-direction, center personnel should be familiar with the concept called locus of control, which developed from social learning

theory explained by Rotter (21) in 1954. Rotter (20:1) has defined the belief in *external control* as an individual's interpretation that a reinforcement following his action is "the result of luck, chance, fate, . . . under the control of powerful others, or . . . unpredictable because of the great complexity of forces around him." Belief in *internal control*, on the other hand, is one's perception that the event is "contingent on his own behavior or his own relatively permanent characteristics." The control construct is a generalized expectancy of internal or external control of reinforcement — an expectancy which results in differences in behavior.

Review of the literature

The development of Rotter's I-E Scale and other measures of one's relative position on the dimension of control has stimulated a mass of experimental literature. For the past 25 years, the interest has not waned, as often happens with personality constructs. Each month, *Psychological Abstracts* lists a dozen or so new studies under the heading "internal-external locus of control." The February, 1979, listings included locus of control studies involving such diverse topics as fantasy play, conjugate lateral eye shift, marital expectation level, and air travel phobia.

Because of the abundance of experimental studies in this area, a novice might find the summaries by Rotter (20), Joe (8), Lefcourt (10), and Phares (17) helpful. From these reviews and recent studies, some trends emerge regarding locus of control among college students. In general, it appears that the beliefs of the college student population today are more external than those of college student populations in past years (22, 9). It can be generally expected that internality will increase with age (16). Although women have consistently tended to be more external than men, a recent study (2) showing no differences between mean scores suggests that the sexes may be becoming more similar regarding internality-externality. Race and socioeconomic level have a great influence on locus of control (3) with high externality associated with minority group membership and low socioeconomic status. A comparative study (15) found that university students in different countries hold different levels of internality-externality beliefs.

Of special interest to educators are studies in which researchers have attempted to predict academic performance by locus of control scales. The Coleman Report (3), a study of almost a half million individuals, found belief in one's control of environment to be a major determinant in school achievement. However, as Rotter himself (22:65) concludes, prediction of school achievement has been "consistently more successful" with children than with college students. Although there have been unsuccessful attempts to relate locus of control and academic achievement among college students (7), some recent studies have met with success. Positive relationships have been found between internality and achievement in test-taking (6), effective study habits (18), subsequent grades (4, 24), and degree attainment (14).

CRASH lab locus of control study

Differences between groups

In the Fall Semester, 1978, the Composition Reading and Self Help Lab (CRASH Lab), Eastfield College, Dallas County Community College District, conducted a study of locus of control differences among groups of students it serves. The CRASH Lab is a college learning center with major offerings in the areas of reading, composition, and study skills, as well as learning assistance in content areas. The 99 participants in the study included 78 of the 93 students who were registered for the two CRASH Lab credit courses, Developmental Learning (DL) 094 and College Learning Skills (CLS) 100, and also included 21 students who had completed more than 5 hours but had not registered. DL 094, a one-hour credit, nontransferable course, requires that 26 hours be devoted to an individualized program in the lab, while CLS 100, a one-hour credit, transferable course, requires a 13-hour program. The *Adult Nowicki-Strickland Internal-External Scale* (ANS-IE), a paper and pencil test, (13) was administered to those 99 students. The test, containing 40 yes/no items, yields numerical scores, the higher scores being the more external. The mean score of all participants was 9.25 with a standard deviation of 4.55.

TABLE 1
Separate t-tests of Differences
Between Group Means on ANS-IE

	N	M	SD	t	p<
All participants in study					
Registrants	78	9.13	4.56	.52	ns
Non-registrants	21	9.71	4.64		
Men	40	10.25	4.69	1.81	.10
Women	59	8.58	4.38		
Other-referred ¹	42 ²	10.55	4.20	2.56	.01
Self-referred	43 ²	8.07	4.68		
Registrants only					
Quitters	26	9.92	4.91	1.09	ns
Persisters ¹	52	8.73	4.37		
DL 094	21	10.38	3.81	1.67	.10
CLS 100 ¹	57	8.67	4.76		

¹one-tailed test

²omission of students who did not give clear indication of referral on questionnaire

Separate t-test comparisons, using .05 level of significance, were made for the following groups (See Table 1): (1) registrants and non-registrants, (2) men and women, (3) other-referred and self-referred, (4) quitters and persisters, (5) registrants for DL 094 and registrants for CLS 100. Other-referred students were those who indicated on a questionnaire that they came to the CRASH Lab because referred by an instructor or counselor, while self-referred were those who indicated that they came because it was their own idea. Quitters were those students who stopped attending before completing the required hours, and persisters were those who completed their programs.

The first two tests were two-tailed, looking for differences in either direction. The other three were one-tailed, since it was predicted that (1) other-referred would have higher external scores than self-referred; (2) among the registrants, quitters would have higher external scores than persisters; and (3) registrants for DL 094 would have higher external scores than registrants for CLS 100. The reason for this last research hypothesis was that DL 094, the nontransferable course, was recommended to those students who had low scores on screening tests and/or a history of failure in their academic backgrounds.

Subsequent t-tests (Table 1) showed a significant difference ($p < .01$) between only the self-referred and other-referred groups. As hypothesized, the other-referred group had significantly more external scores than did self-referred. Two other tests approached significance: DL 094 versus CLS 100 ($p < .10$ in the predicted direction) and men versus women ($p < .10$). Because age was not controlled for in total groups of men and women, t-tests were also performed on scores for men and women when subdivided into age groups: 18 years through 22 years ($N = 22$ for each subgroup, men and women) and 23 years through 35 years ($N = 15$ for each subgroup, men and women). No significant differences were found in either test.

Distribution of test scores

An attempt was made to see if there were different distributions of test scores for men and women. Scores were split into three divisions so as to yield divisions with equal N's — internal (1-6), middle (7-11), and external (12-20) — and frequencies of scores were tabulated related to sex. No significant association was found between sex and test score distribution ($\chi^2 = 1.97$, ns).

Correlations of ANS-IE scores with age and persistence

ANS-IE scores were tested for separate correlations with the two variables of age and persistence. The research hypotheses were that (1) age and externality as measured by ANS-IE would be negatively correlated and that (2) externality would be negatively correlated with persistence among registrants in the CRASH Lab. Persistence was defined as the percentage of commitment (either 13 hours for CLS 100 or 26 hours for DL 094) completed by a registrant. Significant negative correlations were found between men's ages and externality scores ($r = -.30$, $p < .05$) and between the total group's

ages and externality scores ($r = -.24, p < .05$). Though all results were in the predicted negative direction, no significant correlations were found between registrants' *ANS-IE* scores and persistence in the CRASH Lab.

Discussion of results

Two of the findings of the CRASH Lab study are consistent with expectations: (1) that students who indicated that they came to the CRASH Lab because referred by an instructor or counselor would have more external scores than those who indicated that it was their own idea and (2) that the younger a student was, the more external his score would be. Although only approaching but not meeting the designated significance level, a difference in internality-externality between DL 094 students and CLS 100 students would have been a logical finding and is an area for further research.

The tests of differences between men's and women's scores presented some interesting results. The original test of difference between mean scores of all male participants and all female participants approached the designated significance level with the men's mean score the more external. However, subsequent tests found no differences between means when the groups of men and women were subdivided by age and also found no difference in distribution related to sex. The finding of no significant differences between the men's and women's scores was consistent with Chandler and Dugovics' recent study (2) using the same measure.

The failure to find differences in internality-externality between persisters and quitters and the failure to find correlations between the I-E measure and persistence were not a complete surprise. Rotter (22:60) has given an explanation for difficulties in finding relationships between locus of control and college academic performance. Internality-externality scales yield a "generalized expectancy" for internal versus external control. However, the expectancy becomes less reasonable "the more structured, the more familiar, and the more unambiguous a situation is." With age and years in school, then, the relationship between locus of control and academic achievement becomes less apparent.

Also, it must be emphasized that internality-externality is only one of many variables and is an expectancy construct at that. Other important variables, including the value one places on the experience, should be considered in a study. Since achievement behavior among college students is highly complex (1), locus of control cannot really be expected to account for all, or even most, of the variance.

Implications for college learning centers

Possibility of shifts toward internality

Even though some studies, including the present one, have met with difficulty in finding a precise relationship between locus of control and academic performance, reviewers of research conclude, as Roueche and Mink (23:12) have, that internals are "generally better adjusted, more indepen-

dent, more achieving." Therefore, the instructors in a college learning center, realizing the diversity among students with whom they work, can incorporate strategies that facilitate growth toward internality. Previous research, however, cautions against expectations of great shifts. Lefcourt (10:112) explains that locus of control is "a construct, a working tool in social learning theory, which allows for an interpretation of remarks made by people in response to questions about causality." It is not an unchanging characteristic within people, not a trait that they inherit or indelibly learn. Environmental and life events, chronological and mental age, all affect this attitude, as exemplified in studies summarized by Lefcourt (10).

Counseling strategies

The possibility does exist, however, for creating a setting that directs individuals toward taking control of their learning by changing behaviors which inhibit learning and initiating behaviors that facilitate learning. Certain counseling strategies can help students in this process. William Glasser's reality therapy technique, supported by Roueche and Mink (23), is applicable for both individuals and groups.

Reality therapy (5) involves a series of procedures which begin with Step I, the establishment of rapport between the therapist and the client, or, in the case of the learning center, the instructor and the student. The intake process is an appropriate and available time to initiate such rapport. Step II requires a focus on the present behavior that requires change, not of all past failures, merely the one currently causing stress for the student. This step can occur naturally for the learning center instructor and student as they decide on an individualized learning contract. Implicit in this identification is the necessity of the student's commitment to remediation. Step III involves "the payoff," wherein negative reinforcers are identified and positive reinforcers are planned. Without accusation the instructor can help the student confront the negative behaviors and help discover realistic, tangible, affirming activities. Individualized instruction continuously faces the problem of sustained motivation. Step IV responds to that problem by calling for a value judgment. The instructor and student can explore the benefits of achieving the behavior and reaffirm its value to the student. Step V requires a plan be made by the student to reach the goal, and Step VI concludes with follow-up and replanning if necessary.

Learning center instructors having familiarity with the reality therapy procedure can assist students in realizing how much of the learning behavior is a result of their own strengths and limitations. Through determining a concrete action, students can realize their own control over their behavior and make appropriate changes.

Instructional strategies

In addition to counseling procedures, the encouragement of internality has certain instructional implications as well. As previously mentioned, the

intake process can originate the concept of the student's having control by advocating goal-setting, requesting a commitment, and making a plan. Part of the plan should involve a commitment to regular attendance. Many centers allow flexible hours in order to accommodate a variety of schedules, but the student with a highly external locus of control often finds difficulty in prohibiting schedule interferences. An early commitment to a specific time provides a plan for the student and a tangible area for the instructor to reinforce. A more internal student can design a schedule and then make exceptions as necessary.

A learning contract based on mastery of the tasks can further help students realize control by eliminating some of the arbitrary aspects of grading. Instructors should consider breaking the tasks on the contract into small increments that can be positively reinforced through instructor feedback. Reimanis' (19) research with three difference age groups has found movement toward internality when highly external individuals received more personal attention that involved positive reinforcement. Though programmed materials are convenient for individualized instruction, the correct answer is only one kind of positive feedback. Instructors should confer with students frequently and support any progress.

The numerous locus of control studies, though not conclusive, do indicate an interest on the part of educators to find ways to integrate formal learning and personal growth. This interest is supported by this study and further research is encouraged.

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RESULTS OF A MODIFIED PERSONALIZED SYSTEM OF INSTRUCTION

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During the academic school year over one-thousand college students elect to take the developmental reading courses offered by Metropolitan State College in Denver, Colorado. These do not fill any of the graduation requirements of any of the schools and centers of the institution, with the exception of serving as a partial requirement for the Basic Studies requirement for graduation. Thus, the students who enroll in these courses justifiably insist on becoming "satisfied users" in the content and methodology presented in the sections each semester.

Offerings include five-week modules in specific skill areas; an introductory and an advanced course in college developmental reading; and blocks of study and reading skills taught in conjunction with other academic divisions within the college. Included in this list are English composition, history, and the sciences. Skills covered have been vocabulary, reading comprehension, flexible reading rate, critical and creative reading, and the whole range of postsecondary study skills.

It became evident that because of the concerns of students that the courses meet their individual needs and because of the breadth of the offerings within this part of our Reading Department, it was necessary to find some ways to vary the curriculum offerings of our courses for our population. Since the class size averaged over thirty, with only one instructor, this posed a serious problem. The Personalized System of Instruction (PSI) provided an answer and a model for us. We found that by modifying part of the PSI model to fit in with some of the essential qualities of the courses we were offering, we could retain our curriculum integrity and still meet the individual needs of our students.

During the first week of each semester or each module, a diagnostic instrument is employed to determine where each of the students in the class is starting. With this information available, instructors were able to write individual prescriptions for each student. PSI provided us with a tool to

implement this individualized plan and avoid periods of waiting time within the classroom while some class students were completing assignments.

Five essential principles are included in PSI. The first is the development of modules which emphasize the use of written materials including exercises and worksheets related to the textbooks. Next, the students must master the material in each module, as demonstrated by passing a mastery test, before proceeding to the next module. Students may retake all tests except the final to improve a grade. Third, the students move at their own rate (self-pacing) and take mastery tests when ready. All lectures are not compulsory, and are often offered as rewards for work completion or for the interest of the topic. Lectures are also sources of motivation. Class activities for students include reading exercises such as skimming and scanning, critical reading, applying SQ3R to college textbooks, and working through modules; the instructor is able to concentrate on encouraging lagging students and administering and scoring mastery tests. Finally, paraprofessionals and aides can serve as proctors in correcting and discussing mastery tests or material from the modules. (1)

Several modifications were made from the basic PSI format. There is often valuable interaction in class learning sessions. We, therefore, required attendance for at least one specified class session each week and encouraged attendance for the others. A series of established deadlines were set to cut down on procrastination that occurs in a self-paced course. Students were allowed to begin new units before the old ones were completely finished, so that information presented in class lectures would be meaningful. Students accepted these changes and the other PSI principles were retained.

A number of measures were implemented to determine if this innovation in individualized instruction was successful. At four or five intervals during the semester, student evaluations were elicited. While the general comments were favorable, certain modifications were suggested, particularly in course content. These proved to be feasible, and students were delighted to be part of the decision-making process. In addition, the Reading Department chairperson interviewed randomly selected students from all PSI classes to measure attitudes. In both in-class and interview evaluations, student attitudes toward the PSI method were extremely positive and enthusiastic.

There was a concern, however, to determine if this mode of instruction produced at least the same results as the course taught in the traditional method. The Statistical Package for Social Sciences, using a T-test and an Analysis of Variance (ANOVA), was employed to test the hypothesis that PSI provided a viable alternative for teaching reading improvement courses. A T-test was run between independent groups, and then an ANOVA was run to verify the results from the T-test. The ANOVA was employed to see if there were important differences on the pretest that would affect the results of the posttest. The pretest total was used as a covariant to account for the differences found in the pretest.

The *McGraw-Hill Reading Test*, Forms A and b, were used in the four

control and four experimental groups participating in this study. The six categories examined were average reading rate (designated as reading rate 1), textbook material reading rate (designated as reading rate 2), retention, skimming and scanning, paragraph comprehension, and total score. The pretest was given during the first week of the semester, and the posttest was given the week before the ending week of the semester. The results of both analyses are listed below in Tables I and II: (2)

TABLE I

Group Main Effect on T-Test Statistic

Subtest	T-Statistic	Alpha Level
Rate 1	-3.84	.001*
Rate 2	-1.01	.326
Retention	0.11	.911
Skimming, Scanning	-5.87	.000*
Comprehension	-1.82	.083*
Total Score	-2.55	.019*

*means significant

TABLE II

Group Main Effect on F Ratio Statistic

Subtest	F Ratio	F Significance
Rate 1	9.564	.002*
Rate 2	1.942	.165
Retention	3.870	.051*
Skimming Scanning	6.601	.011*
Comprehension	1.016	.315
Total Score	10.913	.001*

*means significant

The positive results of the tests, particularly in the total scores, showed that the PSI mode of instruction was a viable alternative to the traditional method of teaching developmental reading courses. In fact, in many of the subtests and on the total score, students enrolled in the PSI method showed significantly better improvement from pre- to post test than those enrolled in the traditional method. The fact that the students in the PSI sections expressed enthusiasm for the features in the PSI system has led us to believe that we had clearly underestimated the value of this instructional approach.

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GUIDING COMPREHENSION IN THE LEARNING ASSISTANCE SETTING

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Research findings from psycholinguistics reveal two broad cognitive and linguistic factors that intersect to influence a reader's comprehension of written discourse. Recent accounts of the reading process by Pearson and Johnson (5) and Smith (8) contend that the richness of a reader's prior knowledge of a topic in combination with the semantic structure of a text are the two main factors that encourage or inhibit a reader's comprehension.

At the college level these two psycholinguistic factors translate to prior knowledge of diverse subject areas and the ability to cope with technical vocabulary presented in expository text material of varying semantic structures (e.g. Drafting versus Psychology). Given the diversity of the college curriculum, it is ironic that the dominant methods and materials of reading improvement instruction are, as Basile (1) cogently indicated, so distant from the real demands of content area reading. Commercial kits and collections of narrative articles that attempt to simulate content reading tasks are the usual fare. General vocabulary terms like "gregarious" receive adequate attention while content area technical terms such as "photosynthesis" are largely ignored. Thus it becomes possible for a student to be highly successful in a reading improvement setting while simultaneously experiencing great difficulty in the content areas.

A more attractive approach to designing curriculum within the reading improvement setting involves the use of real content area concepts, text material, and vocabulary in combination with the development of more general reading skills. The first prerequisite for the development of a content-centered reading improvement program is communication with content area instructors. While it is not within the scope of this paper to provide step-by-step plans for this early stage of program development, previous discussions by Hubin (4), Silverston (6), and Tomlinson and Green (9) are good background sources. The intent of the present paper is to propose and

demonstrate the use of two practical strategies for a content-centered reading improvement program.

The first strategy is the guided writing procedure generated by Smith and Bean (7). The guided writing procedure (GWP) is designed to encourage active comprehension and recall of content area material.

The second strategy from Bean and Berrey (2) emphasizes the active learning and retention of technical vocabulary from a content area unit. Both teaching strategies are predicated on the important psycholinguistic factors of prior knowledge and the semantic structure of text material.

The guided writing procedure

The guided writing procedure (GWP) is an instructional strategy designed to activate and refine students' prior knowledge of a content topic through speaking, listening, writing, and reading. The GWP encompasses four main teaching objectives (7:3):

1. To activate and sample students' prior knowledge of a topic before they do any actual text reading.
2. To sample and evaluate students' written expression with respect to a variety of content areas.
3. To improve students' written expression through guided instruction in a variety of content areas.
4. To encourage the synthesis and retention of content area concepts through speaking, listening, writing, and reading.

In order to demonstrate the use of the GWP and the vocabulary teaching strategy, the content area of physical education and the specific sport of surfing will be utilized. The surfing text for this hypothetical class is one by Hemmings (3) containing a general introduction to the sport followed by a more technical discussion for the neophyte surfer. Technical vocabulary used in the text includes such terms as: "rocker, rails, and fin" (3:53) which are characteristics of a surfboard, and "curl, tubed, rollercoaster and wipeout" (3:99) which are aspects of waves and wave riding. The following teaching steps from the guided writing procedure can be used within the reading improvement program to ensure active comprehension of the surfing text.

Steps in the guided writing procedure

The GWP involves a series of specific procedures spanning several days of instruction consistent with the usual format of a content unit. The following sequential steps are essential to the success of the GWP within the reading improvement setting (7:4).

Day 1

Informal diagnosis of prior content knowledge and written expression

1. Have students comment on everything they currently know about a topic from one of their content areas (in this case, surfing in physical education).
2. Write down everything students say verbatim on the board or overhead. College students might generate the following concepts and terms: "waves, wipeout, pipeline, log, wetsuit, leash" etc.
3. Have students decide on which ideas seem to be the major ones and which are details. Have students circle which ideas can be developed within one or two paragraphs. Organize these in an outline format.
4. Next, have students write two paragraphs using the displayed outline as a guide. Tell students this will be their "first draft."
5. Have the students do their reading assignment in the surfing text (at home or in the reading lab).
6. Collect student paragraphs and analyze for ideas and organization, pattern of details, effective sentence structure, correct spelling and correct and effective punctuation. Do *not* write edits on the students' papers. Record this diagnostic information on a check list next to each student's name.

Day 2

Teaching content and written expression

1. Display an illustrative student draft on the overhead (e.g. one with run-on sentences), along with the four items on the check list. Have students contribute ideas for editing this example.
2. Return student papers and have students use the displayed check list to edit and polish their first draft. They may include some content revisions based on their text reading.
3. Collect this second draft and compare to the diagnostic check list. After using this procedure for a period of time you should note an upward trend in the quality of students' comprehension and written expression across content areas.
4. Prior to a content area quiz or exam, a review strategy such as the one that follows can be used within the reading lab curriculum.

Developing content area vocabulary

In order to extend and reinforce students thinking about the topic of surfing, the following vocabulary strategy advanced by Bean and Berrey (2) can be used as an extension of the guided writing procedure. Each technical vocabulary term from the surfing unit is listed on eight by five cards. Selected examples of some surfing terms students might be required to know in the physical education class are: "fin, tubed, and wipeout." Students draw a number of random cards from the deck of index cards containing technical terms. With the aid of the Hemmings' (3) surfing text, each student then composes a question that might serve to cue a listener to the identification of

each particular vocabulary term. Questions might focus on such semantic skills as the identification of words in context, categorization, spelling, analogy, experience clues, comparison-contrast, summary, and association. Composing questions fosters creative and divergent thinking as well as providing essential overlearning of technical vocabulary and concepts.

The technical vocabulary can now be reviewed in a brainstorming session within the reading lab. One student displays a vocabulary card (e.g. "wipeout") to others in a small group but he does not look at the card. The other students supply clues as to what the word might be (e.g. "Unlike experienced surfers, beginning surfers frequently do this"). Clues continue around the group until the person holding the word in question guesses what it is.

Both the guided writing procedure and the vocabulary brainstorming activity are effective approaches for enlarging and reinforcing the concepts and technical vocabulary college students need to know in order to be successful learners in their content area courses. More importantly, the use of content area material within the reading improvement program helps bridge the gap between general reading skills and the real world of the content area classroom.

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VOCATIONAL/TECHNICAL READING: HELPING VOCATIONAL STUDENTS SUCCEED AT THE COMMUNITY COLLEGE LEVEL

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Much progress has been made in recent years in the development of content area reading skills. Numerous books have been written stressing the importance of strategies and activities to improve reading in such academic course areas as history, science, literature, foreign language, and even mathematics. And yet, the plight of the vocational student who often moves into a job involving complex types of reading has been largely ignored. This brings to mind a number of questions: Do we know the reading needs of vocational/technical students? What reading problems are these students encountering within their fields of study? What difficulties do they have on the job? What can we as reading specialists do to prepare vocational/technical students to handle the varied reading material they face in school and on the job?

At Cerritos College, there had been talk within the Reading Department of "doing something" for the vocational student. That theoretical "something" had been a stumbling block until two years ago, when we were motivated by funding from the Vocational Education Act to develop a program to aid the 13,600 full and part-time vocational/technical students on campus.

To answer the questions raised earlier, that is, to try to determine the reading needs of vocational students at the college and on the job, we contacted three sources:

1. Vocational instructors on campus, including those in auto mechanics, auto body, welding, electronics, woodworking, plastics manufacturing, and metal finishing;
2. Local employers, including a number of repair shops, salons, foundries, and factories;
3. The students themselves.

The results of the discussions we had with each of these sources were as varied as the sources themselves. The instructors were primarily concerned with the students' lack of study skills. Why were the students not taking notes in class? Why were they unaware of how their textbooks and manuals were organized? A typical concern was that students were able to "turn to page 360," but were unable to locate "the section on spot-welding." Several instructors lamented that students had to be "spoon-fed" vital information, since most could not determine which ideas were significant and which were not.

The primary complaint heard from local business people was that their employees were unable to follow step-by-step instructions for the completion of job assignments. Not only did this involve inability to read shop manuals, but also not following job specifications for important contracts. New employees had a habit of learning to do a job one way (often just by observing another worker who had been on the job longer) and would not vary their performances when different specifications were required. This resulted in orders being rejected, leading to cost overruns, lost contracts, and loss of jobs. Other fundamental problems raised by businesses included employees' ignorance of signs posted around the buildings, inability to read memos, and lack of cross-reference skills.

To find out first hand what kind of students enrolled in vocational classes, to learn of their working and studying habits, to gain knowledge of their concerns about reading and study skills, I enrolled in an auto-body class on campus. Within a month, the students discovered that I was a reading instructor, and they began to come to me for help on note-taking or resume writing or information gathering. The fact that I took the time to enroll in a class was important, for it told the students that I cared about their discipline; we got to know each other, and I gained their confidence. Without this personal contact, this program would not have worked.

Now, what kinds of reading problems did the students feel they had? While individuals voiced specific concerns, there was a general frustration stemming from an inability to understand the complex technical terms within their field of study. They had no knowledge of spelling techniques, word attack skills, or vocabulary study.

Since many of these students were eager to learn anything which might help them comprehend their technical manuals, we decided to run a nine-week pilot project with thirty auto body and welding students to try to get an idea of what approaches might help them learn. The limited time meant limited coverage of the skills we wanted to stress — vocabulary development, understanding technical material, and following complex printed instructions. While the students did not learn as much as they had hoped, we had a general consensus that we were on the right track, that we had gained valuable input into what skills should be included in a semester-long, 3-unit course. We believed further that more discussions with instructors, students, and business people would lead to a curriculum which would benefit the

students, the vocational departments on campus, and the businesses which would employ the students upon graduation.

The course which was developed is entitled Reading 56, Vocational/Technical Reading. This course is open to any student enrolled in at least one vocational or technical course. There are four major areas covered in the course:

1. Technical vocabulary development;
2. Reading and proper utilization of technical materials;
3. Developing job-related reading skills;
4. Developing job-related research skills.

What follows is a description of the skills covered within each of these areas.

Technical vocabulary development

Lectures on phonics, word-structure skills and spelling principles as they apply to technology are followed by independent student work on those word-analysis skills in which each student is deficient. There is a tremendous range of reading achievement within each class. Meeting the needs of all of the students is both a challenge and a goal we have set.

Students are required to master a vocabulary list which has been drawn up by instructors in each of the vocational areas participating in our program. The lists vary in length, and students are expected to master 8-10 terms per week. The student must spell each word correctly, define it, and provide an example of application. When the student has exhausted his master list, he must provide twenty terms from his own discipline which has specialized meanings within his technical field, but general meanings in everyday vocabulary. For example, in auto body, the term "orange peel" refers to a blistering effect caused by too heavy a concentration of paint in a given area. This meaning would, of course, be lost on the layman. Such an activity helps the student understand the concept of multiple meanings of words and serves as a springboard for discussion on vocabulary-in-context techniques; etymology, and dictionary study.

Reading and proper utilization of technical materials

Within this area, students are taught how to identify and use the contents of technical manuals, including the table of contents, index, glossary, chapter headings, etc. Additionally, techniques for previewing and locating information quickly and efficiently are covered, and we explore purposes for reading and asking proper questions to get the most out of one's reading. Finally, students learn how to organize and outline information found within technical material, and how to summarize and retrieve vital information and statistics. In learning these skills, students use their own technical materials, textbooks, and manuals whenever possible.

Developing job-related reading skills

The basic focus within this area is how to follow complex printed instructions, though other skills including reading and understanding various business-related correspondence and technical forms, including resumes, memos, routing slips, and job specifications are also covered. Sequencing, series development, and visualization of both process and product are stressed. One exercise has each student writing instructions for making an object from paper. The instructions are given to another student, who then attempts to make the object. If the directions are clear, the task is completed. If the object cannot be made, the students confer to see if steps were misleading and rewrite those steps so the desired object can be made.

Developing job-related research skills

Here students concentrate on the utilization of reference books and technical dictionaries, and they practice cross-reference skills. Also, they learn a skill which is harder to master than one would first think — interpretation of visual representations such as charts, graphs, schematics, and diagrams. Identification of these different types of visuals is followed by noting the similarities and differences among them. Students then learn how to identify the components and purposes of each, and finally, they learn to interpret each by looking for specific meanings, generalizations, and conclusions to be drawn. In mastering the concepts, each student must select a visual from his technical field and analyze it for the class by identifying the symbols used, explaining their literal meaning, predicting the visual's applicability, and answering any questions generated by the class.

One problem area has been that students read too much into the visuals. To prevent this from occurring, all students are provided with the same visual and asked questions based solely on the information provided by the visual.

The Vocational/Technical Reading Program is embarking on its third year at Cerritos, and we are expanding to include health occupations and cosmetology next year. We feel that ours is a unique program in that it is designed solely for vocational and technical students. We have built a solid base of support within the vocational/technical departments on campus, and this should ensure continuance of a program benefiting a large number of students for years to come.

PROBING SKILLS FOR TUTORS

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The tutor asks a question.

The student answers.

The tutor probes...

Probing is the skill of asking penetrating questions in response to a student's initial answer. Probing leads a student to discover the relationships, similarities and differences that distinguish new concepts from old. When probed, the student is required to articulate the more subtle attributes of the topic under discussion thereby reinforcing the connections between new material and previously learned material.

Question-asking has long been recognized as an essential teacher skill (2, 4, 5, 6). Questions which provide students with practice in discrimination and generalization, and which teach them verbal mediation are especially crucial in learning abstract principles and concepts (1). Probing takes question-asking a step further because the *focus of the probe is the student's response*.

Although probing skills were initially designed with the teacher/student interaction in mind, probing skills are appropriate and, it could be argued, essential in any situation where a student's active participation is desired. Probing skills are especially appropriate for peer counselors and tutors who help other students acquire problem-solving skills. As tutors probe, they focus discussion, they offer practice in critical thinking, and they present a role-model for problem solving.

Probing skills in practice

Tutor questions

The skillful counselor posits a series of questions designed to lead the student to articulate the network of relationships and associations pertinent to the subject under discussion. Thus, an interview with a failing student may include, "Are you sure you want to be here?" "What are your goals?" and,

"How do your parents feel?" Likewise, an economics tutorial session includes not only, "What is marginal cost?" but also, "What should be the relationship between marginal cost and marginal revenue when a firm wants to maximize profit?"

The student's response to each of these questions can be probed further. For example, the economics tutor who receives an answer that "Marginal cost is the cost of producing an additional output." could probe further by asking, "Why is it called marginal?" or "What do you mean by additional?" to ensure the learner fully understands the concept of marginal cost and is not just repeating a memorized phrase.

Types of Probes

The typology of probes articulated in the *OASIS Tutor Training Program* is adapted from Miezitis and Orme (3). The five types of probes included in this typology are: 1) clarification; 2) critical awareness; 3) refocus; 4) prompt; and 5) redirect.

The first three probes represent an unfolding or hierarchy of concerns. *Clarification* is the term given a direct teacher question that asks the student to reiterate his response. "What do you mean by...?" "Be more specific." "In what way?" "Anything else?" All are examples of clarification probes, and are appropriate when the student's answer is judged to be vague or unclear.

When the tutor suspects that the student does not fully understand or wants the student to reflect upon an answer, the tutor might ask: "Why would that be so?" "How would you do that?" "What are you assuming?" "How can you be sure?" These probes are labeled *critical awareness*. They have as their goal the student capable of justifying answers.

The third type of probe in this series is labeled *refocus*. This type of probe focuses the student's attention on relationships. A tutor might ask, "How is this related to...?", or "If that is true, then what would happen if...?", or, "What would _____ (another person or group) say about it?" This type of probe is called a refocus because it causes the student to see the concept in perspective. When a student can approach a topic from an entirely separate point of view, it demonstrates objectivity and often makes demarcations clearer.

Each of these three probes ensures the student's attention to the details of the topic under discussion.

The fourth type of probe is called a *prompt*. Often students respond to teacher questions with lowered heads and mumbled "I don't know's". In classrooms where "right" answers are stressed, students can develop the habit of avoiding an answer even when they have an idea about what it might be. When the teacher hints or prompts, however, the student has the benefit of hearing the question rephrased and/or having his hypothesis partially confirmed. Prompting demonstrates the tutor's interest in hearing from the student, as well as reinforcing the habit of searching for answers as opposed to relying solely on memory.

The final type of probe, a *redirect*, is used when there is more than one student, to include others in the process. Student #2 is invited to comment or add to Student #1's answer: "Tom, do you agree with what Vera said?", or, "Barry, can you give us another example?" The content of a redirect probe could actually be any of the first three probes, but if it is directed to a student other than the person who initially responded, it is called a redirect.

Probing skills workshop

The OASIS Probing Skills Workshop was designed to reach the following objectives:

1. To introduce the concept of probing skills as an important tool in tutoring or peer counseling.
2. To provide workshop participants with the opportunity to view examples of probing skills.
3. To provide workshop participants with the opportunity to practice probing skills.
4. To provide workshop participants with a demonstration of how the OASIS Tutorial Program at UCSD conducts a workshop for tutors as part of its four-unit Tutor Training course.

In the Probing Skills Workshop, participants view a videotape which presents definitions and examples of each type of probe followed by a tutoring segment which demonstrates the probe. A second videotape portrays a group tutorial session. This second tape is used as a stimulus for participants to practice coding tutor comments according to the various types of probes. Two forms are distributed to workshop participants to facilitate recognition: the *Summary of Probing Techniques and Selected Examples* (Appendix A), and the *Probing Skills Coding Form* (Appendix B).

Objectives 3 and 4 are met by dividing participants into small groups, and offering each person the opportunity to role-play a tutor, a student, and an observer. Tutors concentrate on probing; students are requested to be cooperative but naive students; and observers again practice coding counselor responses to determine probing categories. Group discussion focuses on feedback from the observer to the tutor in the form of number and range of probing categories used and appropriateness of the probes to the teaching objectives.

In assessing the probing patterns typically generated by novice tutors, it has been this writer's experience that most persons have habitual speech patterns that make acquisition of new verbal (probing) skills sometimes difficult. Even when the tutor is consciously trying to generate different types of probes, frequently there is a pattern of extended use of one type and neglect of others. The opportunity to observe others as well as to practice probing are both essential to the acquisition of probing skills.

As observers and tutors exchange roles and discuss probing categorizations, often there is clarification of meaning as well as added insight into the tutoring or counseling process. Tutors, for example, often come to tutoring with an implicit model of lecturing as the appropriate teaching mode. On the other hand, a criticism that has been made of some counselors is that in their effort to reflect student feelings, students often come away feeling the counselor was uninvolved and not helpful. Judicious use of probing skills is applicable to both settings.

As with any new skill, to ensure the practice of probing skills, it is important that the Probing Skills Workshop be followed up by further reinforcement. In the Tutoring Program at UC, tutors must be observed by Peer Tutor Coordinators. During some portion of the tutoring observation, coordinators code tutor questions for probing types. Since probing skills demonstrate the tutor's sophistication with material, coordinators are able to give tutors feedback on content as well as process.

Probing skills would appear to be fundamental to the tutoring/counseling process. When practiced correctly they ensure student participation as well as demonstrate the tutor's analysis of a situation. They are a powerful tool in the perennial quest for "how do you teach people how to think?"

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APPENDIX A

Summary of Probing Techniques and Selected Examples

Basic Rules:

- (1) Any tutor response which immediately follows a student response is *either* a **NON-PROBE** or a **PROBE**
- (2) A **PROBE**: Is a tutor response which requires a student who has just responded to go beyond that first response — to clarify it, justify it, further explain it, relate it to another idea, etc.

Types of Probes and Examples of Probing Responses

I. Clarification:	(Tutor asks the student for more information or meaning):
Examples of Clarification	"What do you mean by _____?" "Tell us more . . ." "What else did they do?"; "Anything else?" "Be more specific."; "In what way?"
II. Critical Awareness:	(Tutor asks student to justify his answer, to reflect on it):
Examples of Critical Awareness	"What are you assuming?" "Why would that be so?" "How can that be?" "How would you do that?" "Are you sure?" "Give an EXAMPLE of that." "What do we need to know in order to solve the problem?"
III. Refocus:	(Tutor asks student to relate his answer to another idea or topic):
Examples of Refocus	"How is that related to . . .?" "Can you SUMMARIZE the discussion up to this point?" "PRETEND (Suppose) you are . . . then what?" "How does your response tie into . . .?" "If that is true, then what would happen if . . .?" "What would ____ (another person, group) say about it?" "How is your answer (point of view) different from ____?"
IV. Prompt:	(Tutor gives student a hint, or else Tutor rephrases his question to help student respond: Tutor has questioned student, but student can't or doesn't answer. Tutor therefore rephrases, or makes the probe easier to answer by):
	1. Giving a hint. 2. Asking for an example, etc.
V. Redirect:	(Tutor changes the direction of interaction from Student 1 to Student 2. Tutor is asking Student 2 to respond to the first student's response.)

APPENDIX B

PROBING SKILLS CODING FORM for use with PRACTICE TAPE #1

TEACHER RESPONSE	PROBES					NON-PROBE
	CLARIFY	REFLECT	REFOCUS	PROMPT	REDIRECT	
Sue, what are two systems?						
what systems involve						
define vital						
general meaning						
Necessary for what?						
clarify why necessary						
any function Mike forgot						
relate circulatory to respiratory						
What are you assuming?						
What does Mike's answer assume?						
Mike, see what you assume?						
Where does transport occur?						
what if it didn't						
does it only deliver						
which gas expelled						
what molecule						
tie to vital						
summarize						

RULES:

1. Any tutor response which immediately follows a student response is either a **PROBE** or a **NON-PROBE**.

2. A **PROBE** is a tutor response which requires a student who has just responded to go beyond that first response — to clarify it, to justify or reflect on his answer, to relate it to another idea, etc.

Five types of probes are:

1. Clarification
2. Critical Awareness (Reflection)
3. Refocus
4. Prompt
5. Redirect

As the tutor conducts his teaching session, you are to categorize *each* of his responses according to the categories listed. The tutor's key words are listed to help you categorize each of his remarks.

MATH ANXIETY: WHAT CAN A LEARNING CENTER DO ABOUT IT?

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At UT Austin, many students have expressed the need to improve their skills in mathematics. Some need only limited remedial work to prepare for a university math course; others require instruction in elementary arithmetic. But there is one problem that many of these students share: they are anxious about the thought of working on math problems. This experience has led RASSL/Learning Services to consider ways of confronting the problem of math anxiety.

Daniel (2:1) defines math anxiety as "a strong negative emotional reaction to math which prevents a person from coping with mathematics in the manner he wishes." Kogelman and Warren (5:10) define math anxiety as an intense emotional reaction which "guides and controls one's approach to math to such an extent that doing math becomes extraordinarily difficult if not impossible." A concept which appears in all definitions is the fact that math anxious people are unable to work math problems to the extent of their ability because of their emotional reaction to mathematics. It is this reaction which must be dealt with if a person is to overcome math anxiety.

We at RASSL have begun to confront this problem, by 1) offering a non-credit basic mathematics review class; 2) offering one hour focus groups covering study techniques for entry level math and science courses; 3) sponsoring an informal group dealing with math anxiety; 4) making math anxiety desensitization tapes available in our self-help lab; and 5) developing positive liaisons with Math Department faculty.

To participate in any of our programs, a student must first see a learning specialist available during our office hours. A typical consultation with a student will assess the student's needs and prescribe the program which will best meet those needs. All learning specialists are sensitive to the problem of math anxiety and are able to guide a student into any appropriate RASSL program.

The following is a description of our math anxiety reduction programs

and a description of the students who can benefit most from each type of program.

Basic math review class

A major cause of math anxiety is a lack of basic mathematical skills. Many people graduate from high school with inadequate math skills. This is a source of anxiety as they realize mathematics is a possible obstruction in their college major or career. Berkeley sociologist Lucy Sells (7:1) calls math a "critical job filter" because of the limiting effects of a lack of mathematical skills.

The Basic Math Review class meets for 19 sessions of 1¼ hours each. The first five sessions cover arithmetic, the next 13 cover high school algebra, and the last session covers important concepts of geometry. The course is open entry/open exit so a student may begin the course at any session or drop at any time. Some have chosen to begin the course when the algebra sessions begin. The complete course is also available in our self-help lab and may be studied on a self-paced basis.

The content of the course, however, is not as important as the mode of delivery and style of the instructor. In order to reduce anxiety, it is necessary to keep a non-threatening, non-competitive atmosphere, which can be maintained by a sensitive attitude on the part of the instructor. Whenever possible, the instructor gives positive reinforcement to students for doing well. Skills are taught and there is a constant emphasis on conceptual learning. It is the intention of the instructor to reduce the students' anxiety by their success in understanding these mathematical concepts. Because students will feel more confident if they know how to approach problems, the instructor emphasizes problem solving strategies throughout the course.

Each session follows the same format. Work from the previous session is reviewed, new material is presented by lecture, and problems are distributed and worked on either independently or in groups while the instructor circulates and answers questions. The instructor distributes homework problems for students seeking additional practice. Upon completion of this course, students have shown, according to course evaluations, increased confidence in math allowing them to continue their study of the subject.

Focus groups

Some students experience difficulty in math courses because they do not know how to study mathematics. Much of their time is spent reading and memorizing because they do not have more effective approaches to studying math. This lack of effective study skills may lead to anxiety.

In order to improve math study skills, we offer hour long focus groups which cover study techniques for specific entry level courses in math and chemistry. A learning specialist discusses notetaking, problem solving, and test preparation in general and then applies these techniques to specific

examples from the course. At times, a learning specialist will attend a class for a few weeks to make sure the presentation will be relevant to the course.

By offering focus groups, we intend to reduce the students' anxiety by teaching them improved study techniques for math and science. A learning specialist will refer students to these groups if they are taking the course which the focus group is covering.

Math anxiety workshop

The Math Anxiety Workshop is a five week workshop led by the chairman of the Math Department and a professor in the School of Social Work. The intent of the workshop is not to provide instruction in math, but rather to help each participant discover the nature of his math anxiety and make changes that will help with his specific concerns. The participant identifies the nature of his anxiety by specifically recalling instances in his life when he felt anxious about math. The facilitators aid him in discovering the specific feelings and thoughts he may have experienced in mathematical situations. The participant is then encouraged to identify specific changes he would like to make. At that point, the student makes a contract with the leaders to change his reactions in similar situations. The contracts are very precise and the leaders are very careful to make sure that the goals of the contract are attainable. Later, the participant reports back to the group on how he did on his contract. The philosophy of the leaders is that each participant should learn that he is in control of his interpretations of and reactions to mathematical events.

There are a variety of reasons why a student may enroll in a math anxiety workshop and a variety of changes that different students may experience. For example, the leaders do not assume that all students must learn math to overcome their anxiety. For some students, it is reasonable for them to conclude that it is all right that they are bad at math and it is all right to accept that fact. Others have used the workshop as a support group while enrolled in a university math course. Some students who have realized that a lack of basic skills is the source of their anxiety have enrolled in the Basic Math Review class after a few workshop sessions. This decision is facilitated by the fact that the instructor of the Basic Math Review class attends the Math Anxiety Workshop and the students learn about the non-threatening nature of the class.

Although the Math Anxiety Workshop is not led by a learning specialist, RASSL sponsors the workshop and does all of the initial screening of the workshop's participants. Learning specialists must ascertain whether the workshop is an appropriate referral. Students are questioned about their math background, their current math skill level, their current problem solving skills, and their current study skills in math. It is possible for some students to have completed an advanced math course such as calculus and still be math anxious. Such students would be referred to the workshop.

Math anxiety desensitization tapes

Stress and anxiety are not caused by certain events in themselves, but by our interpretations of these events. A student could easily find himself in a mathematical situation where anxiety could be caused by a negative interpretation of the situation. It is helpful to alter these perceptions associated with the situation and, consequently, alter the anxiety response.

To serve this purpose, math anxiety desensitization tapes (8) are available in our self-help lab. This series of five tapes provides the student with a systematic desensitization of math anxiety.

The purpose of the tapes is to get the student calm and relaxed. When this is achieved, a stressful mathematical situation is presented. At this point, the student must learn to cope with this situation in a calm manner. By use of this process, images of possible unpleasant outcomes from the actual event can be decreased.

The Math Anxiety Desensitization tapes can serve as a useful alternative to the Math Anxiety Workshop. Students who do not feel comfortable in group situations can profit more by dealing with their math anxiety through self-help. These tapes are also available for students who have a schedule conflict and are unable to attend the Math Anxiety Workshop.

Liaison with the math department

All of our math anxiety reduction programs need the support of the Math Department to be as successful as they have been. The Math Department is continually made aware of all our programs and we receive much publicity from individual members of the faculty. We are also available as consultants for the department concerning any learning problems its students may have. Additionally, if individual faculty members have suggestions, we're always listening.

A learning specialist has made presentations to teaching assistants in the Math Department. These presentations cover math anxiety and its causes, and give the teaching assistants recommendations about how they can help students with this problem. It is our intention that teaching assistants' awareness of math anxiety will make them more sensitive to their students' needs.

Conclusion

The best way to confront math anxiety is to hire a math learning specialist sensitive to the needs of the students. However, in an age of tight budgets, this may not be possible. What are some alternatives?

1. Develop strong liaisons with math faculty.

If math professors are aware of the problem, they can ease math anxiety

by making their classes less threatening and more supportive. Learning specialists can make presentations to faculty on math anxiety. Also, a learning specialist who may have experienced math anxiety himself should be well qualified to give mathematicians valuable insight into the problem of math anxiety.

Math anxiety can be reduced if students have a means of learning prerequisite material for the math courses in which they are enrolled. For example, most entry level courses assume an adequate algebra background. Some commercial materials (3) are excellent for review of this subject. A strong interrelationship with the Math Department can be developed by making prerequisite material for entry level math courses available in the learning center.

2. Hire student paraprofessionals.

Those students who are math anxious because of a lack of skills of proper study techniques can be served by their own peers. Peer tutors can teach their students more effective study techniques and problem solving strategies.

3. Use your own resources.

Math anxiety desensitization tapes can be made available in your self-help lab. Students can profit from these tapes on their own without the aid of a learning specialist.

Math anxiety reduction groups can be offered. Many counselors are interested in math anxiety reduction and could serve as excellent group co-leaders with learning specialists. Some math anxiety reduction groups do not teach math, but they work at changing students' negative reactions toward mathematical situations. Such a group does not need a mathematician to be successful, although a sensitive mathematician could make valuable contributions.

Learning specialists with a solid high school background are capable of teaching a class such as Basic Math Review. Commercial books (1) can be used as textbooks for this course. Learning specialists can do a good job because many problem solving skills are closely related to reading skills and because learning specialists are sensitive to learning and anxiety problems (4).

Math anxiety is a major factor in many students' academic lives because it affects not only their self esteem as students, but also their choices in academic and career pursuits. Learning center personnel, because of their sensitivity to students' affective as well as academic needs, are ideally suited to address the issue of math anxiety. The problem can be addressed through improving students' study skills in math, offering background math skills development, or offering math anxiety reduction programs. Any or all of these approaches will provide a valuable service to math anxious college and university students.

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A VIDEOCASSETTE MASTERY LEARNING TUTOR TRAINING COURSE

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One of the major concerns in establishing and in maintaining a learning assistance program is selecting and training the tutoring staff. The criteria for selecting tutors, the content of the training program and the best methods of training are decisions that directors of learning assistance programs should resolve before the program gets underway. However, just as curriculum offerings must change to meet the needs of the population served, so must the tutor training program adjust to staff and student needs.

When the learning assistance program was started at San Joaquin Delta College (Stockton, California) ten years ago, it included only a reading/study skills lab and a writing lab. Tutors were selected from students referred by other English instructors and by the work placement office.

Most of the training was on-the-job training in the form of individual assistance and advice from paraprofessionals and instructors. Tutors assigned to the reading/study skills lab were encouraged to complete at least one lesson from each of the textbooks, kits and programs. A few workshops were held during the first weeks of each semester to provide an overview of equipment, materials and strategies.

Enrollment increases due to the addition of more developmental reading courses, an English as a Second Language lab and related courses meant that more tutors were required. As a result, it was clear that a more extensive and efficacious tutor training program was needed.

The first step was to decide on the criteria for tutor selection. The following requirements were established for students who wished to tutor in the lab:

1. An A or B in English 1A or an equivalent course;
2. Recommendations by two instructors;
3. Fluency in reading and writing English:
 - a. Pass a reading test (the *Nelson-Denny*) with an acceptable score (11th

grade reading level for tutors for whom English is a Second Language and a 13th grade reading level for all others).

- b. Write an essay demonstrating proficiency in content, organization and grammar.
4. An interest in helping others acquire proficiency in English. (Assessed during an interview with the instructor.)

The next step was to plan the course.

The course was scheduled to meet twice a week for lectures, discussions and demonstrations of materials, equipment and methods. In addition, every tutor enrolled in the course was required to work in one of the labs at least three hours per week and encouraged to work as many as fifteen hours per week. Students were paid for their time.

Students enrolled in the tutor training course entitled *English 32 Seminar in Communications: The Nature and Process of Reading* had several other requirements. These were described to students on the course information sheet distributed the first day of class.

The first few class lectures were designed to orient the students to the philosophy of the learning assistance program. The class organization followed this format:

1. Assigned readings dealing with the topic.
2. Lecture-discussion on the skill or topic.
3. Demonstrations of lab equipment and materials.
4. Evaluation of methods, discussion of problems and suggestions for improvement.
5. Demonstrations of effective tutoring methods.

The next topic or skill followed the same format.

The class was usually divided into groups of three or four students for demonstrations and discussions. This enabled each one to have a "hands-on" experience with the equipment and material. The intermix technique was frequently employed: one student was selected after the demonstration was over to explain the material and/or equipment to the next group. This technique usually ensured students' concentration and interest in learning how to use the material and/or equipment.

One may wonder why an alternative to this approach to tutor training was needed. There were several reasons: first, not all tutors could attend the lectures at the scheduled times; second, some students didn't find out about the tutoring opportunity until the semester was well underway; third, some students were absent from important lectures or demonstrations; and, finally, tutor attrition and student population increases caused a continuous need for adding tutors during the semester.

Therefore, a staff development proposal was written requesting funds for the development of a videocassette mastery learning alternative to the

lecture-lab course. It was planned that the videocassettes could also be used by students who were absent from a particular lecture or those who needed to hear the lecture again in order to fully comprehend the concepts.

The criteria for selection and the course requirements remained essentially the same. There were only a few differences: the lectures were on videocassette; no discussions or demonstrations could take place; and students could not progress to a new topic or skill until the previous one was mastered. The information sheet describing the course requirements is presented as an appendix.

The videocassette mastery learning alternative course has an open enrollment which enables students to begin the course at any time during the semester. Students begin the course with an initial conference with the instructor to go over the course information sheet, to learn the location of the tests, videocassettes and linear materials and to learn the procedures to be followed. Students are to complete a pre-test before viewing the videocassette(s) or reading the accompanying linear materials. The pre-test has two purposes: (1) to determine the students who already have a sufficient understanding of a topic and therefore can skip that module and (2) to serve as a guide for viewing the videocassettes and reading the related materials. After completing the pre-test, the student places it in a folder where it is left for the instructor to check. The pre-test is checked within a day or two and the student then proceeds to view the videocassette(s) and read the linear material. If, after completing the pre-test, the student feels that the module should be completed, it is not necessary to wait until the pretest has been checked before proceeding with the module. Upon completing the module, which includes one or more videocassettes as well as written materials, the student obtains the post-test from the Developmental Education Division secretary. The completed post-test is left in a folder for the instructor to correct. Students who score 80% or above may proceed to the next module. However, those who score below 80% are requested to study the materials again before taking an alternative post-test. In some cases, the instructor requests that the student schedule a conference to discuss the module before proceeding with the review.

When students complete all nine modules as well as all the course requirements, they meet with the instructor for the oral and written final exam. Credit is awarded at the end of the semester.

The nine modules in the tutor training course are listed below:

- Module 1: Developmental Education Division Programs (Cassette I)
- Module 2: The Nature and Process of Reading, Part I & II (Cassette II & III)
- Module 3: Diagnosis and Diagnostic Teaching (Cassette IV)
- Module 4: Beginning Reading Strategies, Part I & II (Cassettes V & VI)
- Module 5: Word Analysis, Part I: Context Clues, Structural Analysis, Dictionary Skills (Cassette VII)
- Word Analysis, Part II: Word Analysis Supplements, Four Vid-

ecassettes Describing Vocabulary Materials: Supplement A, EDL Word Clues; Supplement B, Wordcraft; Supplement C, Craig VPR; Supplement D, Craig Roots (Cassette VIII)

Module 6: Comprehension (Cassette IX)

Module 7: Study Skills, Part I: SQ3R, Memory Improvement, Concentration; Part II: Text Desensitization, Purposeful Reading, Flexible Reading; Part III: Skimming Scanning, Speed, Library Skills; Part IV: Listening, Effective Notetaking (Cassettes X, XI, XII, XIII)

Module 8: Spelling (Cassette XIV)

Module 9: English as a Second Language (Cassette XV)

The cassettes which describe materials and equipment can be used by students, new instructors, paraprofessionals and visitors as well as tutors.

Additional modules will be developed covering the learning disabilities program and materials; the basic math lab program; math anxiety reduction techniques; improving students self-concept; relaxation strategies and other methods of improving students' learning.

Student evaluations of the videocassette mastery learning course reveal that the flexible schedule afforded by the videocassette course is an advantage, but the lack of opportunity to question and discuss the concepts was, at times, a serious drawback for many. It seems, therefore, to be unwise to use a videocassette mastery learning course to replace a group instruction course. Instead, it should be used as an alternative for those who prefer an individualized approach or for those who enroll in the course after the semester is underway. It could also be used by students who were absent from a lecture or by those who need to review concepts.

Another approach might be to combine small discussion groups with the videocassette lectures. The discussion groups would provide opportunities for feedback on the course content, for discussion of concepts and for demonstrations. The group sessions could be scheduled to meet the students' flexible schedules. As with most learning assistance courses, flexibility, creativity and responsiveness to students' needs should be the determining factors in tutor training.

ENGLISH 32 SEMINAR IN COMMUNICATIONS: THE NATURE AND PROCESS OF READING

Credit: 3 units

Instructor: June Dempsey

Textbooks: Trela, Thaddeus, *14 Remedial Reading Techniques*; Dempsey, June, Videocassette Modules for English 32

Prerequisites:

1. An A or B in English 1A or 1B.

2. Above 11th grade reading level on a standardized reading test.
3. Recommendations from two Delta instructors.
4. Enrollment in 12 or more units at Delta.
5. Fluency in English as demonstrated in an interview and in an essay.

Attendance (TBA):

1. Tutor at least 3 hours per week.
2. Arrange to view the videocassette modular lessons.
3. Attend lab staff meetings every Friday, 12:30 pm to 1:20 pm.
4. Meet with Mrs. Dempsey individually as scheduled.

Requirements:

1. View the videocassettes and study the materials in the modules.
2. Maintain a journal of your lab activities. Indicate your experiences in diagnosis, instruction (group and individual), practice and evaluation. Include samples of students' work done under your direction.
3. Prepare a written critique of a program in each of the following skills areas:
 - a. Beginning Reading (ESL)
 - b. Word Attack
 - c. Vocabulary
 - d. Comprehension
 - e. Study Skills

4. Prepare a skills paper on one of the reading skills listed on the Reading Skills Chart according to the format below:

Part I: Define the skills. You should footnote your definition. Do not use the dictionary for your definition.

Part II: List the lab materials that help a student learn and practice this skill.

Part III: Describe how you would help a student learn and practice this skill. Tell *what* you would do as a tutor.

—OR—

Prepare materials that would benefit students in the lab. Consult with Mrs. Dempsey before beginning this project.

5. Read the Trela text.
6. Schedule two conferences with Mrs. Dempsey during the semester: One within the first six weeks of the semester and one within the last two weeks of the semester.

Grading:

Your grade in this course will depend on:

1. Lab work based on your attitude, initiative and knowledge.
2. Lab journal.
3. A skill paper or project.
4. Five critiques.
5. Attendance (lab periods).
6. Completion of the videocassette modules.

Objectives of the Course:

As a result of your time and effort in this course, you should:

1. Become acquainted with reading and study skills.
2. Know the various materials in the Learning Assistance Center.
3. Be able to demonstrate how to use the reading materials and lab equipment.
4. Be able to administer various kinds of diagnostic and achievement tests.
5. Be able to critique the various reading and study skills materials.
6. Be able to utilize the techniques, methods and procedures learned.
7. Be able to do ongoing diagnosis and prescription of reading skills.
8. Become cognizant of the various learning styles of the students and use this knowledge to help the students develop their skills.

Course Content:

1. Nine learning modules
2. Videocassettes

A SYSTEMATIC PROGRAM FOR THE TRANSFER OF LEARNING SKILLS TO THE CONTENT AREAS

Gwyn Enright
San Diego City College

Like dedicated doctors, conscientious counselors, high-minded law enforcement officers and even a few parents, learning skills practitioners are in the business of putting themselves out of business. We aim to help students become successful *and* independent learners. Recent attempts to prepare students for the academic challenge are based on the notion that students must be able to use learning skills in the classes they are taking or will be taking. Therefore learning skills in the content area is one accommodative approach which is not separated from the required course of instruction. This content area emphasis stems from a number of visions. First, learning skills instruction should have some relation to academic success or, at least, survival. Second, remedial classes are often punitive and too often far removed from the courses students are required to take. Third, tutoring programs are not usually cost effective; are not always geared to help students become independent; and are often inappropriate for students who need skills repair. Finally, individualized instruction alone does not provide adequately for affect.

Learning skills in the content area

Fairbank's doctoral dissertation probably set the stage for looking at academic achievement as a criterion for learning skills programs (7). Farrell's review, "Reading in the Community College," looks at correlation and comparison group studies which examine the relationship of reading ability to academic success. He concludes reading instruction should not be limited to reading classes and study skills classes could be sacrificed for increased critical reading emphasis in reading classes. He adds that, for student comprehension, textbook readability may be less important than content familiarity (8). Mayfield (22) has compiled publications on learning skills in the content area and Monteith (28) has gathered ERIC documents on reading in the content areas.

Much of the learning skills in the content area activity reported in the professional literature focuses on improving the status of the developmental or remedial program on campus and on hooking content area faculty into the learning assistance mode (15, 33). Meeth proposes a comprehensive academic support concept to change "the peripheral nature of underachiever programs" (26:28). Kolzow outlines how to introduce reading into the content areas the same way a salesman sells a product — he must believe in it and then he must get his foot in the door (18:47). As "samples," he offers his faculty a handbook which addresses their questions about reading and a videotape which elaborates SQ3R for their students (18).

Many learning skills in the content area programs pull together different campus departments and agencies. In programs developed jointly with content area faculty, an incredible expense of effort is invested in coordination efforts (10, 15, 34, 35, 36, 38). Hubin and Martin report an approach using subject area teams composed of paraprofessionals. Counseling assistants, study skills advisors and tutors all share liaison legwork (14). An ambitious coordinated project at Eastfield College draws instructors from different divisions, counselors, and counseling paraprofessionals together (12). In a biology and learning skills project at Brigham Young University, interdivision hassles are candidly reported (10). Hosey and Rapaport found students increasing their chances of earning passing grades if they enrolled in "back to back" sections of College Reading and Study Skills and Business Organization and Management (13). Bergman lists a myriad of strategies employed at Queensborough Community College to link learning skills to the content area: "back to back" classes, mini-courses, co-requisites, instructor consultations, and classroom visitations (1).

Although many learning skills content area programs are described, often actual application is either not described or is deferred, in a concluding paragraph, to the academic specialist (5, 37). Other program descriptions either present a Learning Skills technique adaptable to the content classroom (16, 27) or they treat programs which substitute content specific material during skills development practice (4, 20, 21). Mayfield adapted generally accepted learning skills strategies to the needs of law students (23, 24), while Helm devised appropriate learning skills approaches for medical students (9). Silverston reports using videotape to simulate academic experiences in study skills counseling (32). However, too few programs described based those skills strategies selected to transfer to content areas on research that point to particularly promising approaches for learning that specific subject (11, 25). At Middlesex County College, Kistulenz tried to show that math, science and writing exercises constructed from students' textbooks resulted in greater reading gains than standard lab exercises, but only the science sections showed significant gains according to the Nelson-Denny post test (17). Mayfield has based the FAIR technique on results from a 1966 dissertation comparing methods of underlining (24). In a study of 81 college bound high school seniors, Bialick, Bialick and Wark found significant gains

for students instructed with textbooks previously underlined by prestigious individuals (2).

Also, too few reports include an evaluation based on data other than (1) faculty endorsement; (2) new courses initiated and approved by local curriculum committees; and (3) inclusion of the fledgling program into the nest of college graduate requirements. Some measures used to evaluate the learning skills/content area approach include examining midterm grades, hours of voluntary participation, and content area test scores (34). Other methods reported are examining final grades, collating questionnaires and follow-up surveys (38) as well as analyzing SAT scores and content area semester grades (3).

Purpose

One approach to the transfer of learning skills to the content area was implemented in the Independent Learning Center at San Diego City College with funding awarded by the *Fund for the Improvement of Post Secondary Education* (31). Several sources contributed to the conception of the program: (1) two noncredit adjunct workshops in Psychology and Biology offered through the Learning Resource Center at California State University, Northridge (2), Tomlinson's integration of learning skills workshops with biology classes at the University of California, Riverside, and (3) the notetaker model used by the Office for Hearing Disabled Students at California State University, Northridge. The general goal of the program was to provide a variation of low-cost tutoring through paraprofessionally prepared self-instructional materials. While tutoring was offered to students during the project, the major thrust of the program was the development of self-paced learning skills materials specifically tailored to courses in four target areas. Other goals were both ambitious and naive: we hoped to lower student attrition in the target classes, to show higher grades for students enrolled in those classes, and to act as a catalyst to enhance other learning assistance programs on campus.

Procedure

Instructors in the target courses were informed about the project before its initiation and they were enthusiastic about participating in the year-long program. Each of the four paraprofessionals or ILC Technicians specialized in Mathematics, Chemistry, Psychology or Economics. These were areas in which students often requested help and for which few commercial materials were available.

Paraprofessionals were trained in both elementary instructional development techniques and learning skills. They attended a basic workshop conducted by an instructional systems specialist from San Diego State University. They learned how to formulate instructional objectives and how to operate a *Sealpress*, a 35mm camera, and a *Copy Pro*. Reserve reading

included Mager and Popham (19, 29, 30). The ILC Technicians received learning skills training on the job through scheduled monthly meetings and informal meetings with the project director.

Technicians worked twenty hours each week; ten hours were "public hours" spent in the Independent Learning Center for drop-in tutoring. These scheduled hours were published in faculty and student bulletins, in the student newspaper, and in hand-outs to the classes. The remaining ten hours were spent auditing classes and taking notes; taping key lectures; interviewing instructors; evaluating commercial learning skills materials and content area materials; and designing and developing an learning materials technicians felt, in their judgment, would help students in the target classes.

The four ILC Technicians were essentially undercover agents and were told "anything goes." They were given little formal direction and were expected to synthesize information from tutored students, the target instructors, and their auditing experiences. They were to devise creative ways to apply learning skills to content in order to help students perform more successfully in the classes.

In order to provide some supervision and structure, the paraprofessionals kept daily logs in which they recorded the hours they worked, what they accomplished, and questions or comments they had. These were turned in, reviewed and returned each week.

Results

Project outcomes were varied and often unexpected. City College faculty became more knowledgeable about ILC goals, learning assistance and learning skills in the content areas. In a seven-item questionnaire, faculty participating in the program noted endorsement of the liaison model. Several instructors took advantage of the write-in option on the questionnaire to request additional help in assessing how students were processing in-class experiences and to request assistance in selecting support materials corresponding to their textbooks.

In addition to sensitizing content area faculty to available learning assistance support, the groundwork was laid for the initiation, approval and implementation of mediated, college transferable adjunct courses in 27 different academic areas. Many of these one-unit, individualized courses have learning skills components corresponding to the course outlines of the content area courses in which concurrent enrollment is required. Four hundred seventy-two students enrolled in the adjunct courses this year.

Throughout the project, information about City College students was gathered. Learning skills areas in which students felt shaky were identified through questionnaires. Three hundred twenty-five economics and psychology students were surveyed in their classes. Of those, 40% indicated they needed help with vocabulary in their textbooks; 50% said they would like help with key concepts introduced in their texts. Time management and

memorization were learning skills topics written in by surveyed students. The majority of the students said they learned best in class, while 30% indicated they felt they could learn effectively on their own. Five percent noted they learned best from a tutor. Only two percent said they learned best from an instructor during his office hour.

Other project outcomes related to the ILC Technicians' activities. Their energy seemed limitless and, with their flexible schedules, they succeeded in infiltrating the campus on behalf of the ILC. Instructors in the target courses were encouraged to come into the Center to preview and evaluate materials. Other campus agencies, district offices, colleges and universities were drawn into the project. Contacts with professionals and with vendors were made. In addition, as a follow-up to a student needs survey, the psychology paraprofessional initiated a Text Anxiety Reduction Program which was a coordinated effort of the Counseling Center, the Student Health Center, the Psychology Department, and the ILC and which was overseen by the Dean of Instruction.

Of course, the major thrust of the program was the preparation of self-paced learning skills materials specifically tailored to content area courses. Most of the materials developed by the paraprofessionals fell into two categories. One category was indexes that systemitized existing ILC resources and correlated them to modular pre-tests. In this way, specific math remediation was offered to chemistry students. These organized keys were made available in the ILC and were distributed to students and faculty in the target courses. The other main category of materials developed was individualized, self-instructional single concept materials to elaborate problem vocabulary. Examples of these programs are self-instructional notebooks explaining the demand curve and the supply curve and slide and tape programs illustrating learning and conditioning.

Because of remodeling and moving difficulties and hiring procedures, the momentum of the project was delayed too far into the academic year for retention or grade improvement data to be meaningful. However, the evaluation of the project included the number of students who visited the ILC for help in chemistry, mathematics, economics, and psychology; the number of new programs purchased in those areas; the increase of faculty improvement in the Independent Learning Center; the instructors' surveys and informal technician surveys; the report of an outside consultant, Frank Christ, who evaluated the program. Total student visits to the Independent Learning Center in the four target areas grew from 261 the year before the project to 2683 the year the project was implemented. The number of occasions in which content area materials in the target areas were previewed, evaluated and recommended for purchase by content area faculty increased from seven to 17. The total number of faculty members initiating academic adjunct programs coordinated with the Independent Learning Center increased from 15 to 40. Yet, at the time the project was evaluated by the outside consultant, only seven of the 24 hoped-for objectives had been achieved.

Discussion

Most problems in achieving all the project's objectives grew from unrealistic expectations of a program designed as a one year pilot project. Other problems were ones avoidable in future replications of the program. Since no incentives for faculty participation were built into the project, faculty were not required to work with the paraprofessionals — only to advise. Consequently, many faculty viewed the ILC technicians as their personal "teaching assistant" to the detriment of the program's goals. Also, the project suffered from skimpy provisions for administration. One of the original project directors accepted a position at another college; the remaining project director was assigned less than 20% of the program; the original program officer from the Fund for the Improvement of Post Secondary Education was reassigned during the project.

But many aspects of the design, the methods and the outcomes of the program showed promise. The paraprofessionals brought a fresh view to the educational setting. They created a systematic means for the learning center to tap into the campus as a whole, to serve the entire campus community, and to track students beyond their voluntary visits to the Independent Learning Center. The liaison model was effective, realistic, non-threatening, and a great shortcut to team teaching. The materials produced, while hardly "Madison Avenue" quality, communicated well with City College students and took their place between impersonal commercial materials and costly one-to-one tutoring.

Summary

The Program for the Transfer of Learning Skills to the Content Areas, supported by the Fund for the Improvement of Post Secondary Education, using a paraprofessional /instructor/learning center liaison model to produce grass roots learning materials for students enrolled in four target areas and to enhance student and faculty involvement in learning assistance and with the Independent Learning Center. Recommendations for establishing a program like the one at San Diego City College include adding a full time media technician and a full time project director to the program. Paraprofessionals who are not enrolled in classes on campus and who are not graduates of the college would add objectivity to the research aspect of the program. Scheduled weekly meetings of the entire project staff would help avoid duplication and would enhance the training component of the program. To take greater advantage of the faculty expertise available for the program, both released time or monetary incentives and a training workshop for faculty are recommended for replications of this project.

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THE BYTE-SIZE REVOLUTION: COMPUTERS AND READABILITY

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The purpose of this paper is to describe the design and operation of a campus computer readability service. This report is written for those who already have some knowledge of readability formulas and will be most helpful to those who have access to a computer. While all of the information necessary to establish a computer readability system is not given, the report does help to explain the system as it now exists at Linn-Benton Community College (LBCC) in Albany, Oregon.

Operation of the readability service

The LBCC Computer Readability Service consists of a one-fifth time reading specialist, a data entry operator, and the computer readability system. The specialist arranges for materials to be analyzed by working with faculty members or others who request the service.

Once the materials to be analyzed are in the possession of the reading specialist, excerpts are taken directly from the materials or photocopies may be made of the materials. If copies are made, materials can then be returned to the requestor almost immediately. The guaranteed early return of materials is often the factor that causes people to use the service, since instructors, for instance, may need their textbooks almost nightly for class preparation.

Most formula authors refer to sample selection as being a "random" process. We use a statistical random process to choose samples from throughout the materials. When samples must be taken from specified sections or chapters, we use a stratified random sampling procedure. This ensures a fair representation of samples within each section or chapter. In any case, we try to avoid picking random samples based solely on personal preference. If, however, a requestor wants to know the level of difficulty for a specific section of prose, we also will analyze selected samples by computer.

After the sample pages have been picked and copies have been made of them, the data entry person enters the samples into the computer via termi-

nal or key punched computer cards. Following a few simple rules for input similar to those proposed by Barry and Stevenson (1), the entry person can accomplish this step in no more time than it would take to type the material. One advantage to using cards is that a permanent record can be kept for later, more detailed analysis.

The computer time necessary for the readability analysis varies in relation to the amount of information that has been requested. For instance, if only the Fry and Flesch formulas are requested, less than ten seconds are required for analysis of an entire 15-sample selection. If formulas that require extensive word list checks are requested, however, the computer time increases. When the computer is instructed to print out the samples, provide the percentage of personal pronouns denoting gender, and list the words at or above a certain grade level, the processing time increases even more. Still, this maximum minute-per-sample time is impressive when contrasted with the several hours it would take a human analyst to count syllables, words, and sentences (possibly rechecking each several times), match words in lists, and perform mathematical computations.

The computer printouts received by the requestor are depicted in figures I and II. Each sample summary provides readability information for just one passage. The Selection Summary is a composite of the sample summaries. The printouts have been designed to minimize the necessity for further analysis. Their 8½x11 inch size provides an easily copied and stored product. The various title elements allow the user to set up files by several different categories such as title, subject area, publisher, author, and grade level.

The passage lengths may vary slightly, but all statistics are based on a hypothetical 100-word sample. Sample sizes can be as large as 200 words. There is no minimum sample size, although passages with less than 75 words appear to be artificially high or low in difficulty when compared with other samples of greater size taken from the same materials.

One especially useful application of the computer system has been to provide readability analyses of learning activity packets. When these individualized instructional materials are analyzed prior to publication, the information can help provide the writers with suggestions for modifying the packets. For example, readability analyses of materials for a state-funded culinary arts curriculum were instrumental in causing the learning packet instructions to be rewritten.

One other feature of the computer system is the identification of words at or above a predetermined grade level based on Taylor's list. If the requestor is interested in finding out what words are at or above the eighth grade level, for instance, the computer will print out those words along with the words not found in Taylor's 9,000 word list. This list may help writers of teacher-made materials prepare the readers for difficult words. The changes made by writers may not appreciably affect the readability grade levels of the materials as measured by formulas, yet they may be easier to understand because of the changes.

Background

The data in this report were obtained from research articles and from the experience gained in designing and operating a computer readability system. The system has existed in its present form since September, 1978, although earlier versions have been used at LBCC since April, 1976.

Although some recent articles have questioned the appropriateness of using readability formulas to analyze certain types of written materials, it is not the purpose of this paper to defend or support their use. It is wise, however, at least to be aware of some of the criticism that has been leveled at readability formulas. Nelson (24) warns of the formulas' limitations when used by content-area instructors. Standal (26:646) writes, "The readability formulas are not absolute. If they are regarded as general indicators, they can be quite useful." Others, such as Maxwell (22) and Marshall (20, 21) cite sections of prose than defy accurate labeling by readability formulas.

After using our computer readability service to find the difficulty levels of hundreds of materials, we believe it is the *use* of the information that should concern readability analysts, not the method of application. If readability formulas can accurately be applied to large quantities of material by a computer in much less time than is required by a human analyst, then the analyst has much more time to spend on other tasks. The analyst can determine who the audience is, what the specialized terms are, and how the other statistics generated by the computer can be used to assist readers of the material.

A 1975 article by Barry and Stevenson (1) stirred this author's curiosity enough to start the preliminary steps toward the design of a computer readability system. In replicating Barry and Stevenson's work, we made some changes that made the program more useful to us. One of these changes was a decision to print out a list of words not found in the Dale-Chall list. We found the list to be helpful when working with students who were assigned paragraphs that had previously been analyzed by the computer. For several months, this single-formula program comprised the entire LBCC "system."

Further research revealed few references to previous computer readability studies. Much of the research was contained in unpublished dissertations. Studies that provided us with more information about determining readability by computer include those done by Berkeley (2), Branch (4), Coke and Rothkopf (5), Danielson and Bryan (7), Fang (10), and General Motors (16). Klare (18) provided a list of readability studies that had been done prior to 1975.

An early goal was to expand the computer program to include other readability formulas. The first major hurdle was the requirement by some formula authors such as Fry (14, 15), Flesch (13), McGlaughlin (23), and Farr, Jenkins, and Paterson (11) that syllables should be counted within each sample. The high costs of data processing in the 1960's and complex rules of English syllabication caused at least one researcher, Fang (10), to conclude

that such a computer program was of questionable value. Nevertheless, Fang did design a syllable-counting computer program that contained many rules, exceptions to the rules, and exceptions to the exceptions. His program was designed to test broadcast news copy and included some rules that seemed inappropriate for readability formulas. According to his guidelines, for example, the word "fire" has two syllables. The next steps were to cull those rules that were inapplicable, apply the formula to hundreds of words from dozens of subject areas, and make adjustments to the rules.

Comparisons of computer syllable counts with human counts taken from the same passages have yielded correlations of .98. This is despite the wide range of subject matter analyzed, including monosyllabic grade school materials and polysyllabic technical program materials. Although other computer readability designers, such as General Motors (16) and Feisenthal and others (12) suggest using mathematical estimates to determine syllables based on letter and vowel counts, we have not found this method to be as accurate as ours. Once the syllable-counting subprogram was made as efficient as possible, those formulas requiring this step, Fry (14), Flesch (13), McGlaughlin (23), and Farr-Jenkins-Paterson (11), were added to the system.

The last formula added to the system was one designed by Spache (25). This formula determines grade levels of difficulty for materials written below the fourth grade level. Since the Spache formula also requires a check of each word against a list of familiar words, we then consolidate the Spache, Dale-Chall, and Taylor (27) lists.

The consolidated word list can also be accessed for uses other than readability estimates. For example, a user can have the computer print out all the words at the eighth grade level (as identified by Taylor) that have a common letter combination such as "ie-ei." This data can help spelling instructors focus in on the words most likely to be used by students of varying abilities.

Conclusions

The feasibility of offering computer readability assessments as a campus developmental service has been demonstrated by the system at LBCC. By applying research findings to an area that has been traditionally offered, though usually not developed into a campus service, LBCC's computer readability system provides a model for other institutions.

One advantage to having a computer analyze materials for readability is that the readability process can be looked at more objectively. The human analyst becomes involved with the *results* of readability studies rather than the *process* of readability. The analyst can also avoid the misconception that a goal has been reached when a list of grade levels has been handed over to someone who requests a readability analysis.

The old computer saw of garbage-in, garbage-out (GIGO) applied with equal emphasis to readability analyses. Materials submitted for computer

analysis should be ready for publication before being entered. A recent example points this out. The readability level of some learning packets on the use of basic tools were hovering around the eighth grade mark. The formulas had been applied to the rough drafts of the materials, however, and further checks for evidence of lucid style and logical sequence had not yet been made. These checks revealed that some sections of the materials, though written as an "easy" level, were nearly incomprehensible. Used as a tool, the computer can provide valuable assistance to the reading specialist and writer. Used as a crutch, it can provide a wealth of misleading data.

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FIGURE I
 READABILITY ANALYSIS
 RUSS GREGORY
 DEVELOPMENT OFFICE
 LBCC

 * SELECTION *
 * SUMMARY *

TITLE: HOW TO TAKE TESTS
 AUTHOR: WALTER PAUK
 PUBLISHER: MCGRAW-HILL
 SUBJECT AREA: STUDY SKILLS

SELECTION CHARACTERISTICS

SENTENCE LENGTH
 FREQUENCY

1-2 (WORDS).....	0%
3-5.....	11
6-12.....	28
13-19.....	37
20+.....	24
Mean (WORDS).....	17

WORD LENGTH
 FREQUENCY

1-3 (LETTERS).....	42%
4-5.....	27
6-8.....	22
9-11.....	8
12+.....	
1 (SYLLABLES).....	66%
2.....	21
3.....	8
4.....	3
5+.....	1
MEAN (LETTERS).....	5
MEAN (SYLLABLES).....	1

GENDER OF SELECTED PERSONAL PRONOUNS

MALE.....	100%
FEMALE.....	0

UNFAMILIAR WORDS

DALE-CHALL LIST.....	18%
SPACHE LIST.....	22

WORD GRADE LEVEL

UN- 4%	3 - 8%	7 - 2%	11 - 0%
PP- 32	4 - 5	8 - 2	12 - 0
1 - 26	5 - 4	9 - 0	CL - 0
2 - 12	6 - 4	10 - 1	

GRADE LEVEL READING EASE

FORMULA

GRADE RANGE

FARR-JENKINS-PATERSON (5 THRU CG).....	10.9	8.4
FLESCH (5 THRU CG).....	10.0	8.7
SMOG (PP AND UP).....	10.9	12.0
FRY (1 THRU CG).....	8.8	8.0
DALE-CHALL (4-CG).....	9.8	11.5
MEAN (FOR SCORES 5 THRU CG INCLUSIVE).....	10.1	2.0
PUBLISHERS DESIGNATED GRADE LEVEL.....	0	

FIGURE 11
 READABILITY ANALYSIS
 RUSS GREGORY
 DEVELOPMENT OFFICE
 LBCC

TITLE: HOW TO TAKE TESTS
 AUTHOR: WALTER PAUK
 PUBLISHER: MCGRAW-HILL
 SUBJECT AREA: STUDY SKILLS 13
 PASSAGE NUMBER: 1C (CHAPTER 9, PAGE 106)

PASSAGE

IN A WAY ALL THE OPTIONS HAVE A CERTAIN APPEAL. BY ATTENDING TO THEIR DIFFERENCES AND MORE EXACT MEANINGS YOU WILL BE BETTER ABLE TO CHOOSE THE CORRECT ANSWER. BLUNDER IMPLIES GROSS STUPIDITY OR IGNORANCE. DECISION CONVEYS THAT A CONSCIOUS CHOICE WAS MADE. FAULT REFERS TO AN IMPERFECTION OR BLAMEWORTHY DEFECT. AND MISTAKE EXPRESSES A MISCONCEPTION OR MISUNDERSTANDING LIKE THE ONE IN THIS SAMPLE. OPTION D IS CORRECT.

READING CHARACTERISTICS

SENTENCES.....	4
WORDS.....	68

SENTENCE LENGTH

FREQUENCY

1-2 (WORDS).....	0	0%
3-5.....	1	25
6-12.....	1	25
13-19.....	1	25
20+.....	1	25
MEAN (WORDS).....	17	

WORD LENGTH

FREQUENCY

1-3 (LETTERS).....	27	40%
4-5.....	12	18
6-8.....	20	28
9-11.....	6	9
12+.....	3	4
1 (SYLLABLES).....	39	57%
2.....	19	28
3.....	5	7
4.....	4	6
5+.....	1	1
MEAN (LETTERS).....	5	
MEAN (SYLLABLES).....	2	

GENDER OF SELECTED PERSONAL PRONOUNS

MALE.....	0	0%
FEMALE.....	0	0

UNFAMILIAR WORDS

DALE-CHALL LIST.....	21	31%
SPACHE LIST.....	24	36

WORD GRADE LEVEL

UN- 5 7%	3 - 7 10%	7 - 5 7%	11 - 0 0%
PP- 20 30	4 - 1 1	8 - 1 1	12 - 0 0
1 - 15 22	5 - 6 9	9 - 1 1	CL - 0 0
2 - 2 3	6 - 3 4	10 - 1 1	

WORDS AT OR ABOVE GRADE LEVEL 8

MEANINGS (UN) IMPLIES (9) STUPIDITY (UN) IMPERFECTION (UN) BLAMEWORTHY (UN)
 DEFECT (8) MISCONCEPTION (10) D (UN)

GRADE LEVEL READING EASE

FARR-JENKINS-PATERSON (5 THRU CG).....	13.5
FLESCH (5 THRU CG).....	12.3
SMOG (PP AND UP).....	12.0
FRY (1 THRU CG).....	13.0
DALE-CHALL (4-CG).....	14.2

RANGE (FOR SCORES 5 THRU CG INCLUSIVE).....	2.2
MEAN (FOR SCORES 5 THRU CG INCLUSIVE).....	13.0

STUDY SKILLS: A GESTALT APPROACH

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In the past twenty years, study skills classes have become popular components of learning assistance programs. Many of these programs are designed to help preserve some stability in student populations which have been generally decreasing since the early 1970's. Another function of these courses is to introduce and integrate "high risk" students into academic programs. While there is great merit to the basic goal of any program of effective study — to help already competent students become more efficient, and less academically competent students to become minimally proficient in their studies — there is little supportive evidence in studies like those done by Pauk (11) and Robyak (15) to show such programs have any long range effects on the students' ability to succeed in college.

One reason might be that many of these study skills programs stress a prescriptive approach; in effect, the instructor as the learning authority tells the students: do this and you will succeed. To help the student along the instructor offers many learning techniques intermixed with a liberal dose of practical dutch uncle advice. But there is a major problem: the communication flow of all these techniques and good advice is strongly in one direction: from the teacher, who is actively involved in teaching, to the students, who are passively sitting, absorbing the information passed on by the instructor but who are not applying it to their content area studies. According to Weigel and Weigel (21) and Bake (1) the result is that the students know the basic principles of good study habits, but simply do not use them in their everyday academic work.

A possible solution to the problem of student passivity might be to provide in the study skills course the opportunity for the students actively to *experience* learning to learn. In recent publications by Putnam (14), Shenkman (17), Soll (19), and Brown (2) the merits of hands-on, in-class teaching techniques are extolled for their benefits to the students. But in order for group learning and active student participation actually to work the

teacher must provide a sense of community, of involvement in the classroom. He must create an atmosphere in which the students feel that they can take the risks of being learning initiators rather than learning receptors. And in this way, the classroom itself becomes a gestalt — a framework in which there is a "whole picture" which includes both the cognitive and the affective features of the learning process. It forms the sort of basis on which rest many of the learning and reading principles discussed by psycholinguists like Frank Smith (18), Cooper and Petrosky (3), and Kenneth Goodman (7).

In Goodman's model of reading, the reader is constantly involved in a gestalt, a condition in which elements of perception are in a figure-ground situation. The reader decides which are the figure (important or necessary cues) and which are the ground (less important details). As he guesses and chooses, the reader also is constantly verifying the choices he has made. According to Smith (18), this process is applicable to learning in general.

Essentially if an effective study program is designed to meet the full range of students' needs, that program will have to take into account the language process of the reading act and the psychological framework in which that act takes place. There is no intention to imply here that the teachers of reading and learning skills must become amateur clinical psychologists who diagnose and prescribe for their student/patients. If anything, the reading specialist must be very careful to avoid such a dangerous position. But to presume to teach reading or study skills on a psycholinguistic base while ignoring one-half of the approach — stressing only language skills — is perhaps almost as dangerous. Lila Soll (19:497) believes that

The long range goals...include helping the student to develop an awareness of the strengths he brings to college and of the specific skills he needs for success, and developing useful criteria for judging his own performance. The assumption underlying this approach is that learning is most effective when reinforcement is immediate and motivation is intrinsic.

The teacher of reading and learning skills is a teacher of whole-person skills. If he is a specialist at all, it is a specialist of the "in-general," the totality of what it takes to make a student a competent, productive, and self-fulfilled learner capable of functioning independently. These sorts of goals coincide with the basic goals of gestalt psychology.

Gestalt: a brief definition

According to Fagan (5) there are several approaches to experience and learning. These "isms" represent the basic philosophy behind the discipline.

Scientific

"Aboutism," the individual is a dispassionate, analytical observer.

Religious	"Shouldism," the individual learns the do's and don'ts of how to behave.
Existential	"Is-ism," the individual resigns himself to the turns of fate.
Gestalt	Non-dependent on any "isms," the individual — in tune with the environment — controls his own behavior.

What follows is a brief definition of some of the ideas of gestalt as they apply to learning skills:

Gestalt

The term means "form" or "shape." An organized whole. In gestalt psychology the main goal is personal awareness and self-support. The focus is on *experience*, arousal from within (motivation).

Good or firm gestaltent

1. Figure/ground clearly, sharply differentiated
2. Perceptual activity selective
3. Motor behavior well organized and directed

Poorly developed gestalten

1. Confusion
 2. Lack of self-regulation
 3. Lack of interest in self-activities
 4. Person blocks part of the self or the environment
- Fagan (5)

Contact:	self — environment (unitary interfunction) encounters with new ideas, concepts, people
Confluence:	a flowing together healthy — good habits, carefully built and nurtured unhealthy — bad habits. Ingrained, inflexible ways of doing things.
Introjection:	swallowing what the environment has to dish up reading can be a form of introjection. Perls (13)
Projection:	the individual refers to "it" or "they" when he usually means "I." ("It can't be helped." "They always do that to me.")
Retroflexion:	The person does to himself what he would like to do to others (and thus becomes his own worst enemy)
"Duty" vs. choosing:	duty is "disowned responsibility." Naranjo (10)

One of the core issues of gestalt psychology is whether the individual is the controller — his control guided by the demands of the situation — or whether the individual is being controlled, a hapless "victim" of the environment. If the ultimate goal of an effective study skills program is to make the individuals enrolled independent, and more mature students, the principles of gestalt psychology should act as general guidelines for the organization and implementation of the program.

The student in control

According to a study done by Treppa (20) of "academically apprehensive" students, individuals who tend to enroll in effective study courses are:

1. passive
2. prone to self-disparagement
3. alienated from their parents
4. not necessarily underachievers

The indications of this study are that perhaps it is overly simplistic to assume that a study skills course tends to involve mostly cognitive factors: the "how to" approach which teaches learning devices while minimizing the affective domain. The passivity of the students needs to be converted into "creative aggression." To do this the student needs to feel as if he is at least partly in control. The feeling of control can be encouraged by stimulating the students' particular learning modes through cooperative learning groups. This technique encourages students to be more flexible in their own use of these modalities, and they can see others learning by means of modalities not their own.

The whole idea that students possess unique styles of learning is not particularly new. In 1921, Carl Jung proposed several rational "types," the thinking type, the feeling type, the sensation type, and the intuitive type — Farrell, (6). Later Witkin and others proposed two general categories of learners: field dependent and field independent, those who relied on their environment in the learning process, and those who were capable of imposing their own structure, independent of the learning environment. What must be stressed in the research conducted by Witkin and his colleagues (22:7) is that "there is no implication that there exist two distinct types of human beings." In fact, it is probable that successful learners are capable of utilizing both styles, depending on the demands of the situation.

Since Witkin's original study in 1962, subsequent research by Davey (4), Satterly (16), Kagan and Zahn (9) has shown that there is a definite connection between learning style and successful reading study skills. So one very important objective could be to make the field independent student more field dependent, and the field dependent student more field independent through classroom involvement. According to Davey "field independence is positively related to aspects of comprehension, especially those tasks requiring a reor-

ganization of material or location of main ideas." But she also goes on to say (4:115) that perceptual style is related to maturation, and that it is possible that successful college students "...have learned to adjust their styles to changing comprehension tasks."

In creating a gestalt in the classroom, the instructor sets up a total learning environment: the students do not learn *about* learning skills, they see them in action.

The role of the teacher

Using the basic principles of Gestalt psychology, the teacher becomes a classroom facilitator and resource person rather than an authority figure. The main object is to create a *learning* rather than a *teaching* gestalt in the classroom. If students are to be given the opportunity to practice controlling their own academic lives, they must be given the opportunity to feel as if they can control the environment, at least part of the time.

The teacher needs to take a non-judgmental position. In a course such as effective study skills there are often no clear-cut right or wrong answers. There are only broad guidelines within which people who study effectively usually operate. According to Davey (4:118),

Students should be provided with alternatives in terms of specific activities and they should be guided to try out and to self-evaluate the different approaches.

In emphasizing that there are several approaches to solving study skills problems, the instructor can encourage the students to use critical thinking skills, the ability to form opinions and test them using empirical methods. If students decide to apply a learned study technique, it is not because they have been told that it is good for them but rather because the instructor gave them the opportunity to discover it for themselves.

Some advice for in-class techniques

The following are a few suggested guidelines for using gestalt techniques in the classroom. Many of them are probably applicable to the programs already established in most college study skills classes; the gestalt techniques could serve to add an extra dimension — the dimension of personal commitment and involvement on the part of the students.

The key word here is *involvement*: the individual student needs to feel that he is part of school society, the loose federation of classes in which there often are tight sub-groups who positively reinforce and support their individual members. A program at the City College of New York places students in study groups as part of a program to increase learning efficiency. According to Lila Soll (19:497),

A positive side effect of the study labs has been the discernible lift in student morale resulting from discovery by a student that he is not alone in having difficulty with a particular text or lecture style.

A key job of any teacher is to establish and nurture this crucial sense of community in the classroom; some of the following techniques may help:

1. Always begin a new class with an icebreaker. If the students are to function as a community, they need to know each other and feel at ease with one another — as well as with the teacher.
2. Use cooperative learning groups — at least for part of the time in every class session.
3. Utilize duplicated handouts to *illustrate* the skills being studied; *talking about* a skill is not nearly as exciting as *doing* it.
4. Encourage the students taking the course to give personal "testimonials" — if a student claims that a particular skill really works, it is far more effective than if the teacher (an obviously biased source) makes the same claim.
5. Use open questions on quizzes — for example: "What are three of the most important things to remember when you take a test" (assuming several more than three ideas were generated in class). Thus the student can exercise his ability to choose.
6. Emphasize a multi-skill approach on all projects or quizzes: reading, writing, and speaking. This touches on all learning styles.
7. At the end of the course, say goodbye. To achieve a sense of closing, each student speaks briefly to each person in the room, telling that person how he helped make the class a profitable experience. (Sit in a circle for this exercise.)

Of course there are no unconditional guarantees that these techniques will answer all the problems of making a study skills program have long lasting overall effects, but the gestalt approach will do one thing: it will allow the students to *experience*. Perhaps for the first time they may perceive the fun of learning, the emotional charge of relying on others in order to become a truly independent, discriminating learner/teacher.

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TEACHING COMMUNICATION SKILLS; A SEARCH FOR THE STRUCTURE OF MEANING

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Many communications skills teachers, their minds boggled by the options open to them in grammar instruction, have put the situation on "Hold" and are not dealing with it at all. Others are taking a stand based on erroneous premises. The fact is that a rule is a rule, whether it comes from Webster or Chomsky or anyone else, and rules are not what students need to learn.

What is important to the student is the search for the meaning underlying surface expressions. Teachers can show students how to investigate the author's structure of meaning, and they can do this without teaching rules and terminology, in much the same way that I can drive a car without knowing what or where a distributor wire is.

The modern grammatical tradition has progressed from what we call traditional grammar through structural linguistics to transformational grammar. A brief look at the theories behind these grammars will point out that traditional grammar and transformational grammar are neither mutually exclusive nor entirely contradictory. Scholars and scientists of the past grappled with the relationships between meaning and expression, the natural bases for categories of words, the origins of extant systems of expression, and linguistic universals. Today, these are still the concerns of grammarians.

In the mid-1780's, an erstwhile Episcopalian priest, language philosopher, and traitor to the British Crown named John Horne Tooke (16) wrote *The Diversions of Purley*, in which he rightly asserted that while grammar was the first subject taught, it was often the last understood. He felt that the practical grammars being used in the schools were made up of rules without reasons (a modern charge against traditional grammars) and that philosophical grammars were made up of unintelligible reasons and ridiculous distinctions (a modern charge against transformational grammar.) To explain this, he said that grammarians confused themselves because they assumed words to signify things. His position, and John Locke's, was that

words signify ideas in the mind. Carrying this concept further, Tooke delineated only two categories: noun(ness) and verb(ness). All others are abbreviations for other words created for speed and facilitation of communication. Tooke is important to our study because he formulated his theory of language against the background of Locke's psychology: he presumed a fundamental relationship between psychology and linguistics. He, in fact, foreshadowed psycholinguistics, but this aspect of his grammar was overwhelmed by his genius for etymology.

There is a paradox in American education regarding language philosophy: while Noah Webster (17) based his grammar on *The Diversions of Purley* and praised John Horne Tooke at every opportunity for his insights, he is the one to "blame" for American prescriptive grammars. Webster feared national instability after the American Revolution. A true patriot, he held British English in disdain and determined to lead the new nation to its own Standard language, a language superior to British English. To this end, he worked diligently; his name became synonymous with language propriety and authority.

I hear echoes of Noah Webster today. Consider the following two quotes from a 1978 ETS publication:

Not merely a "prestige dialect," Standard English is a highly practical set of conventions about the use of language that most educated people share. (1:5)

and

Good, experienced writers can write almost automatically in a way others can understand readily because they have trained themselves to think clearly, using the conventions of Standard English. (1:5)

ETS has succinctly summarized the traditional philosophy: if the writer is to exactly present his meaning, he is to employ accepted forms and patterns in his attempt to elicit a standard understanding in the reader.

In the late 1920's, Bloomfield (2), dissatisfied with the traditional grammars on the grounds that they were founded on language intuition, proposed the use of axiomatic methods so adequate to the study of mathematics. Unfortunately, he also committed himself to the Behaviorist model of Stimulus-Response, thereby stifling the concept of linguistic meaning and restricting language study to the observable phenomena of phonology and morphology. Bloomfield's influence is still strong today in the reading materials bearing "linguistic" labels, but as Olsen (15) has pointed out, these are woefully inadequate because they are not based on the structure of meaning. The "Nan can fan Dan" variety of reading instruction sabotages a reader's search for a message.

By 1946, Zellig Harris (9) had begun an extension of the research on and descriptions of phonology to syntax. He presented the notion of the transformation, a notion revised and refined by his student and collaborator, Noam Chomsky. Chomsky (4) conceives the transformation as a device which registers the intuitions of native speakers and writers concerning particle movement behavior in English: every surface production proceeds from a deep structure of meaning, following the course dictated by some rule, or transformation. Thus, according to the transformational model, criminally oversimplified here, we see the writing-reading communication process as:

from	through	to
Writer's	surface structure,	Reader's
deep structure	which is the	deep structure
(meaning)	combination of	(meaning)
	orthographs,	
	syntactically	
	arranged according	
	to an intuitive	
	grammaticalness	

Transformational grammarians assume the Standard to be carried through intuition of what is and is not grammatical; the Standard is really unnecessary for clarity and precision. The whole of the productive communication act goes through intuition of grammaticalness to involve the whole of the receptive communication act. The whole of the act encompasses a person's knowledge, experience, deep meaning, linguistic competence, linguistic style, linguistic context, and linguistic surface expression.

I have taken the following principles from extensive research on the role of grammar in language instruction to support this claim.

Goodman (7) identifies three different networks of cues that provide the language information utilized in deriving meaning from written language: cues within words, cues within the flow of language (or grammar), and cues within the reader.

Durr (6) concludes both that readers profit from instruction for specific purposes and that those who understand grammatical structure are better readers than those who do not.

Y. Goodman and Greene (8) point out that complex relationships are learned by readers through exposure to the precise relationships between clauses.

Marshall (13) observes that some materials specially edited for poor readers are really harder to comprehend because they have had the structural representations of relationships removed to lower the readability. Thus, teachers must select material carefully.

Larkin (10) posits the idea that surface structures must be unpacked by the reader to reveal their deep logical content.

Minkoff and Katz (14) call for the teaching of a large passive grammar, referring to that range of surface syntactic constructions that the reader seldom or never uses but has learned to respond to.

Bram (3) reports that skill at manipulating sentence patterns and organization are the most significant influences on the readability of scientific prose.

Linn (11) concludes that the time-consuming stress by teachers upon terminology and dissection of the language, from whatever philosophical perspective, prevents practice of simple but essential procedures that students must learn before they can write effectively.

Lunsford (12) finds that all language skills are related and that gains in reading and writing parallel each other: as syntactic maturity increases, so does the ability to draw inferences and make logical connections.

Finally, Daiker, Kerek, and Morenberg (5) find that their students trained in sentence-combining exercises increased their syntactic maturity, bridging one-third of the distance originally separating their syntactic measure from that of professional writers.

From either the traditional or the transformational grammatical perspective, reading and writing teachers can lead students in their search for the structure of meaning. Reading teachers can effect better comprehension from either the traditional or the transformational perspective. However, those teachers *require* a consistent understanding of meaning and its expression. And there's the rub: reading teachers require a philosophy of grammar and a knowledge of that grammar's nuts and bolts. Reading students, on the other hand, require only the practical ability to manipulate their language. As reading teachers, we must understand the relative differences between the productive mind and the receptive mind, tremendous discrepancies that cannot be bridged at the surface level alone.

Good writers write a great deal, and they can manipulate sentences in their search for precision. Their teachers, however, need much more knowledge: a consistent philosophy of meaning and an understanding of its expression through language. Only by such an understanding can a writing teacher structure a consistent, effective program of learning.

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A MODEL FOR INDIVIDUALIZING INSTRUCTION*

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It is a well known fact that, on the one hand, it is not economical to create and manipulate separately designed reading instructional programs for each individual; however, on the other hand, the most prevalent ideas of designing one reading instructional program with the hope that it will fit the needs of all individuals is highly questionable. An economic and efficient alternative would be the development of reading programs designed to fit the needs of groups of individuals classified according to individual attributes. Learning experiences founded upon the static attributes of groups of learners offers achievement opportunities for all learners within the group; therefore, providing learning experiences that are a plan of continuous progress for all group members. Hopefully, this approach will help eliminate the belief that all learners should and/or will adapt to the reading instruction.

The objective of an individualized reading instructional program should be to identify those individual attributes of learners and teachers that could be coupled with resource attributes and task conditions to form a schema, or model, for the selection of individualized instructional strategies. As a result of this process, it becomes evident that if learning is the ultimate product of the instructional environment, then the instructional environment is the product of the interaction within, between and among the teacher, the learner, the task, and the resources. This process allows the teacher to concentrate on collecting reading information necessary to reach decisions about what to teach, how to teach, and how much to teach, in relation to restraints such as costs, time, space, equipment, teacher competencies, and the group "makeup." In essence, the analysis leads directly to a reading instructional design that specifies preplanned interaction within, between,

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and among the teacher, the learner, the task, and the resources (materials, equipment, and methodologies), resulting in an instructional environment where responses are more predictable.

Reading teachers can focus on each of these above mentioned variables in planning their instruction. Decisions can be made about what to teach, when to teach, how to teach, and how much to teach. Such decisions are made in relation to the teacher's instructional competencies, learner needs, materials available, time, and group size. A logical analysis of these variables allows for matching the external conditions of a learning task with the internal conditions of the learner and the attributes of the teacher and resource, resulting in an individualized instructional environment.

Learner style is the first area of focus. Information in this area is gathered by using various diagnostic procedures. The diagnostic data are analyzed to identify learner's reading strengths and weaknesses, attitudes, appropriate instructional settings and motivation strategies. The level of diagnosis and interpretation employed will depend on the teacher's competencies and the instruments available. Assessment and interpretation, however, should focus on learner's strengths as well as weaknesses. Reading strengths form the basis for subsequent reading instruction, whether it be developmental, corrective, or remedial.

Not only are decisions made about learner's reading strengths and weaknesses, but also decisions are made about the most appropriate instructional setting. Whether learners would learn best individually or in groups, whether they can be paired with other learners, and whether they are easy or difficult to motivate — all influence the method of instruction selected. For example, several learners have problems with comprehension of literal information. Specifically, none of them can determine the main ideas of a story. Their reading strengths and weaknesses are similar and one could assume that all of them would benefit from identical instruction. However, one learner learns best in a small group setting. Another learner learns best when instruction is individual. A third learner is motivated by sincere praise that is not motivating for the other two learners.

Following the analysis of information about the learner, teachers now look at this in relation to the *task conditions*. These are the products of instruction that specify what the learner should be able to do following reading instruction and the instructional procedures appropriate to this product. Behavioral objectives are one example of task conditions. Other examples include how the learning environment should be structured, what learner performance indicates learning, and which instructional procedures would maximize the likelihood that the desired learning is acquired by the learner.

Analysis of information in this area helps the teachers relate the learners' needs to the learning task. This information aids identification of learning outcomes appropriate to the learners. Thus, rather than forcing learners to fit the curriculum, they are taught the reading skills they need.

For example, the information gained from diagnosis might indicate that several learners have a reading problem with a specific word recognition skill and learn best in a highly structured setting. In addition, they benefit most from instruction showing relationships rather than instruction focusing on differences. Hence, *learning tasks are structured* on the basis of this information to assure that instruction meets their identified learning styles and specific needs.

Resources attributes are the materials, methods, and approaches available to the teacher for reading instruction. It is important to determine not only what is available, but how well the resources meet the learner's reading needs. The following questions enable the teacher to analytically choose resources to individualize reading instruction.

1. Is the intent of instruction to introduce, reinforce, reintroduce, provide repetition, or evaluate a reading skill?
2. Does the organizational aspects of the skills involve grouping, separating, or integrating relationships of content?
3. Does the learner learn best when instruction is highly structured or minimally structured, sequential or nonsequential, or emphasizes relationships or differences?
4. Should the structural organization be small group, large group, or individual?
5. Will the instructional resources influence the learner's mood and attention to motivate participation in instruction?
6. Does the learner learn best with concrete or vicarious examples and illustrations? Should these be visual, auditory, or a combination of the two?
7. Are there instructional limitations, such as cost, equipment, time or space?
8. Are the materials available for instruction ones with which the teacher is familiar and competent?

Answers to these questions allow teachers to select and design resource materials that are most appropriate to the reading needs of the learner. Relating the resources to the learner and to the learning tasks assures that the resources used for instruction will facilitate reading development.

The last instructional variable that contributes to an individualized reading program is *teacher style*, which is a synthesis of the other three variables. As teachers prepare to begin the instructional process, their philosophy and attitudes toward the learner, the task, and the resources influence the effectiveness of instruction. The teacher is the final determiner of whether or not the reading instruction offered is truly individualized. As the instructional process is administered, the teacher continually assesses learners' reaction, effectiveness of the resources, and the appropriateness of the task. Ongoing analysis assures that the instruction is appropriate and is

having an effect on each learner's reading. Changes can be made as the analysis suggests instructional effect is lessening.

Learner's needs will change as reading growth becomes apparent. Materials used for instruction may diminish in their effectiveness as learners become bored or confused with them. Learning tasks may need to be modified if they are too easy or too difficult for learners to obtain. Basically, one must continually analyze all of the instructional variables and make necessary changes for individualized reading instruction to operate.

Example of an individualized program

Presented below is an example of how a teacher might develop an individualized reading program. This program illustrates each of the variables as discussed earlier.

LEARNER STYLE (EXAMPLES)

- Reading comprehension strengths for Sally, Mehegan, Joe, Fred and Bob.
 1. Able to recognize and recall specific facts.
 2. Appear to be able to recognize or recall literal character traits (this needs to be further substantiated through observation).
 3. Well developed word recognition and word analysis skills.
- Reading comprehension weaknesses as identified through the use of the above instruments and observation.
 1. Difficulty comprehending literal sequential information.
 2. Problem making inferences about character traits.
 3. Suspect problems with critical reading comprehension based on over dependence of literal information (performance in other classes would support this).
- Instructional setting as identified through observation and as appropriate to instructional emphasis.
 1. Short individual sessions for discussing comprehension purposes, introducing worksheet activities, and relating both of these to our comprehension goals.
 2. Small group instruction with other learners.
 3. Paired with another learner to discuss information gained from reading.
- Motivation strategies as identified through observations and discussions with learners.
 1. Respond well to sincere verbal and written praise.
 2. Work best when specific goals of instruction are presented. Relating each instructional activity to a goal should maintain high level of motivation.
 3. Respond well to own record keeping system to monitor progress.

TASK CONDITIONS (EXAMPLES)

- Behavioral objectives

1. Identifies correctly the sequence of literal events occurring in various types of reading materials.
2. Infers character traits from literal information found in varying types of reading materials.
3. Infers from stated information found in reading materials cause-effect relationships.
- Instructional procedures as determined through observation and performance in various instructional settings.
 1. Learn best when instruction is highly organized and specifies learning outcomes.
 2. Take advantage of interests by using newspapers, short stories, library books, and content area texts for comprehension instruction.
 3. Creative writing activities emphasizing cause-effect relationships and development of sequence throughout a story should allow for application and reinforcement of reading instruction.

RESOURCE ATTRIBUTES (EXAMPLES)

- Instructional materials, approaches, and formats.
 1. Pictures, filmstrips, and films appropriate for introducing or setting purposes for stories read.
 2. Creative writing activities.
 3. Content area texts.

TEACHER STYLE (EXAMPLES)

- Limited selection of filmstrips and films in the classroom. Need to check with other teachers for films and filmstrips that they would loan. Also, look through media catalogs and order films and filmstrips well in advance of when needed.
- Review books in the library and select several to keep in classroom.

The above example points out that individualized instruction is not molding the learner to the instruction, but is matching the instruction to the learner. Learners who learn more rapidly than others are allowed to move into different instructional settings that extend their learning. Learners who exhibit difficulty in one instructional setting may require regrouping to allow for mastery of needed skills. The most important part of individualized instruction is that what and how the learners are taught is determined by their strengths and weaknesses in specific skill areas, not by the content of materials.

With the realization that neither a set of materials nor a specific approach or best method exists that assures all learners will read at their ability, the major factor that determines a learner's success in reading is the teacher's knowledge of those variables that affect learning. Through critical evaluation of learner style, task conditions, resource attributes, and teacher style, teachers can begin to truly individualize their reading program. The overriding purpose of this instructional system is to differentiate and coordinate personnel, time, and available resources to maximize the reading development of all learners.

TEACHING READING TO NON-ENGLISH SPEAKING ADULTS

E. Sue Saunders

Teachers of ESL programs should be aware that language learning is not just an intellectual discipline. It is not merely committing to memory a new system of sounds, a new vocabulary and patterns that will enable the student to communicate. Language learning is closely related to the social and psychological well-being of the learner (3). The student is in class to acquire those abilities and skills necessary to communicate needs, interests and ideas (4:90).

In addition, the teacher serves as a representative of the American language and culture she is attempting to transmit. The student will acquire from her an understanding of the sociocultural patterns of the English-speaking peoples (4:90). It is the teacher's responsibility to make the transition into the new language a positive and rewarding experience.

Material and methods used in the classroom must be chosen in light of their relationship to student needs and aspirations. Because different student populations respond to different approaches and methods, the instructor should consult and analyze all material available to her and adapt and modify it to meet her purposes or class goals before deciding on any one particular approach for her class. The classroom teacher will do well to incorporate the following eleven principles suggested by Finocchiaro (95):

1. Learning takes place when it is related to the needs, interests and immediate environment of the learner.
2. Instruction should begin at the student's own level.
3. Students learn at different rates and in different ways.
4. Student activity is basic to learning.
5. Repetition is needed to develop habit of using sound, word forms, and word sentences.
6. Repetition should also be paced in future lessons.
7. Knowing that a response is correct leads to learning that response.

8. Learning is enhanced when students understand the concepts and meaning of what they are repeating.
9. Learning should be functional and have relevance for the students in terms of their needs and values.
10. Transfer of learning does not generally take place automatically. Instruction must bridge the gaps.
11. The sequence of learning requires careful planning.

Pre-reading

Reading is a language related process. It is an interrelated web of listening, speaking, reading, and writing. Therefore, the teaching of beginning reading to non-native speakers consists of helping students relate and transfer auditory signals for which they will have to learn the visual signals. Many experts agree that the teaching of audio-lingual understanding should precede reading and writing and eventually proceed into an integrated program of audio-lingual reading and writing (9:268). "The spoken language is primary. All human beings can speak. Many of them cannot read or write," (96). For this reason, initial reading must always be based on material that the student can understand and say.

Language is a system of sounds that the student must hear and to which he must attach meaning. Listening is important to developing sound recognition and forms the basis for correct speech, which in turn provides the foundation for success in reading. Listening habits must be practiced. Students may begin with instruction in the sounds of the letters and proceed to listening to and understanding material read aloud by the instructor.

Students may be introduced to the alphabet with letters and pictures and later progress to words and stories through pictures, pantomimes, dramatizations or equivalent expressions in their native language. To practice and test for listening ability, the instructor may find the following drills useful:

1. Given two words (or letter sounds), learner will hold up "yes" sign if they begin with the same sound (are same sound).
2. Given one key word, and then three other words, learners are asked to say the word which begins (ends) with the same sound as the key word.
3. Given pictures whose names all contain the same initial (medial, final) sound except one, the learner will identify the one which is different.
4. Given a written consonant (vowel) and several pictures of objects, the learner will identify the object whose name contains the sound of the given consonant (vowel) in the initial (medial, final) position.
5. Given a sentence orally, the learner will identify an illustration of the sentence.
6. Given a word orally, the learner will indicate the number of syllables it contains (2).
7. Given a story orally with illustrations, the learner will indicate yes or no to questions about the story (2).

After the student has sufficiently mastered the skills of listening and auditory discrimination, he must learn to make the proper utterances necessary to be called spoken language. Spoken language is behavior which is learned through imitation, involvement, internalizing, and finally identification (9:38). As a student learns sounds through imitation, these sounds develop and are internalized. As he progresses, the student soon goes beyond the mere routine of making sounds; he adds gestures, tone of voice, pitch, rhythm, melody, and facial expression. The instructor's aim in the understanding-speaking phase is to provide enough practice and repetition to produce spontaneous, habitual control of speech sounds in certain prescribed sequences (9:28).

The student's speaking language development can be made a part of his personal encounters with his surroundings by using words, phrases and sentences to explain his contacts with whatever reality he has found for himself. Experiences provide the opportunities to develop the percepts, images, memories, and finally, the concepts to which language may be attached and by which language may be used (9:30). These opportunities may be developed through the language-experience learning approach:

"What I can think about, I can talk about. What I can say, I can write (or someone can write for me). What I can write, I can read. I can read what others write for me to read" (1:1).

A language experience approach may be utilized alone or in combination with other approaches. Experience stories can be used as lead-ins to published readings. Here, the teacher makes an effort to include in the experience stories, many of the words that appear in the first reading books. Fortunately, adults have had many experiences and come to class with many mental images which help lead to understanding.

Other exercises which can help to elicit speaking are as follows:

1. Given the names of several objects, students are asked to repeat the names (2).
2. Given the question (repeated several times in class) and the answer, students are asked to say the answers to practiced questions (7).
3. Given a sentence orally (or a picture cue), the learner will answer questions about the sentence (or picture) (2).
4. The learner will describe orally pictures, objects or activities.
5. Given a simple oral question concerning family, school or community life, the learner will give an appropriate answer orally.
6. Given a story orally, the learner will answer questions about the story (7).
7. Given the meaning of the adjectives "happy," "sad," "in love," "loyal," "shy" and "devoted," learners will choose which of the feeling words best

describes themselves and share with others their feelings about themselves (5:16).

Story-telling is of value in promotional oral language. Teachers must wring every activity dry of every language possibility, both receptive and expressive, for it is the task of the teacher at the pre-reading level to offer a full-scale program of oral language which has been organized for building the language structures, the vocabulary, and the storehouse of meaning that the students may then bring to print (9:31).

Understanding and speaking should always precede reading. It is only after students can say any material with reasonable fluency that they should be permitted to see it (4:137). The teacher should always read aloud for the students any material they will be expected to read. She should read as though she were speaking in thought groups so that students will realize that the printed page represents spoken language. In other words, reading readiness techniques (e.g. listening and speaking) should not be used only before reading is introduced. Readiness for reading should be ascertained at all levels of reading growth (4:140).

This method of teaching students spoken language before and with written language is sometimes referred to as the audio-lingual approach. This method emphasizes phonology and structure in oral communication. Students practice reading and writing skills in conjunction with oral work. The approach utilizes a variety of techniques including aural discrimination and pronunciation drills, structure drills, situational practice, dialog memorization and practice, short reading with intensive questioning, and controlled writing. Audio-lingual theorists emphasize the importance of the control and gradual development of vocabulary and structure. They begin with the simplest of sentence patterns and proceed step by step to more complex ones. This is a method which places considerable importance on the students' ability to produce clear and grammatical English. The audio-lingual method can, but should not, degenerate into mechanical repetition and drill where cognitive understanding and meaningful communication are overlooked.

Another method, the situational-direct method, concentrates on the basic communication skills by having students hear, practice, read and write English in the context of situations which duplicate those in daily life. This method does not attempt a great deal of control over or gradual introduction of grammatical structures since a wide variety of such structures is needed in any given situation. This method works somewhat better with the intermediate or advanced ESL student who can communicate orally.

No one method or approach can justifiably claim to be the method for all students. In most classrooms, effective instructors use the eclectic method — a wide variety of methods, materials and audio-visual aids. In general, we can say that any method in which the student participates actively and cognitively in the language practice is valid.

Beginning reading

Reading is generally placed third in the hierarchy of communication abilities ESL students need to develop. In planning her course, the teacher will need to include techniques for extending the student's experiences, for teaching word recognition skills, for developing a rich vocabulary, and for ensuring comprehension while maintaining the students' interest. Just as the teacher's aim in the speaking phase of the program was habitual control of speech sounds in certain prescribed sequences, her aim in reading is to help students develop habitual responses to visual marks. Again repetition, practice and drill will help to accomplish this end.

There are many theories and methods for teaching reading to non-English speaking adults. This paper presents two. These two popular approaches to beginning reading programs vary mainly in the emphasis. One emphasizes comprehension and the other word identification. Comprehension emphasis programs initially place primary stress on obtaining meaning from the written form of language while word identification emphasizes decoding or "cracking the code," that is, the ability to work out the pronunciation of written words.

The learning-experience approach mentioned earlier emphasizes meaning as it takes the student from the oral recognition of words to the visual recognition. Among the advantages of the learning-experience programs listed by Allen (1) and Dallman (3) are: 1) learning to read is easy and interesting because the learner's own vocabulary, language structure and patterns, and experiences are employed in the reading materials; 2) students acquire a reading vocabulary whose value they easily recognize; 3) specific reading skills are introduced and reinforced as the teacher perceives the need, thus making learning relevant; and 4) experiences are made more meaningful by having them recorded. This method is easily used in conjunction with other programs.

Phonic programs place emphasis on learning symbol-sound associations and applying phonic generalizations. The vocabulary is usually controlled by using only words that can be constructed by the phonic elements already introduced. After all the decoding skills in the program have been introduced, there is almost no vocabulary control. A number of words that are exceptions to phonic generalizations (e.g. *the, one*) must be taught as sight words. Laubach's steps in this approach proceed as follows: 1) relate spoken letter to picture (key word); 2) relate word with the written form of the whole word; 3) identify a certain sound with a spoken word; 4) associate the sound with its letter symbol; 5) identify other familiar sound-letter associations within the word; 6) blend the sounds represented by the letter symbols into a whole word; and 7) bring the word into automatic sight recall through repetition. The student will associate some meaning as soon as he responds to the printed symbol with the correct sound. When he responds to the printed word "bird" with the spoken "bird," the word will have whatever meaning is

already stored in his experience. Since the sentence is the natural pattern of speech, the student moves from the key word to a sentence where a particular meaning will be conveyed. Here the student will recognize the key word within the context and will relate an oral sentence and a written sentence. The sentences follow a sentence pattern model which the teacher supplies by reading the sentence the way it is spoken. The teacher then reads a group of related sentence patterns where only one or two words are changed in each sentence in the same pattern group. This makes for ease and fluency of reading. Students can interpret meaning through voice tone and stress. The key word is stressed in the sentence. The content is discussed and main ideas summarized. Students are then asked to read silently to find the answers to specific questions and read them orally to verify answers. They then are asked to relate content to their own experiences. No lesson is complete without some direction from the instructor as to the functional use of what the student is learning (7:15).

America has gone through periods when the prevailing beginning reading instruction was alphabet-spelling, whole word teaching, intensive phonics, sentence or story methods, or silent reading for meaning, to a period when combinations of the best of all material prevails. The ESL instructor attempts to combine the good features of all the approaches to meet the needs and expectations of their particular student population. His job differs mainly from the regular adult reading teacher only in its emphasis on first insuring the student have a clear oral and spoken understanding of the language before introducing print.

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LEARNING ASSISTANCE SUPPORT SYSTEM FOR DISADVANTAGED NURSING STUDENTS

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The Learning Assistance Support System for disadvantaged nursing students at California State University, Long Beach, is five years old. The program came into existence through the combined efforts of Beth Moore, Associate Professor, and Wanda Pentecost, Professor of the Department of Nursing.

While serving on the University Scholastics Standards Committee, Pentecost became concerned over the number of disadvantaged students reapplying to the university after six semesters of academic failure. These students, admitted to the university by non-traditional admission criteria through the Educational Opportunities Program, had had little attention paid to their learning needs (10). To help alleviate this situation for some of the students, Moore and Pentecost volunteered to become academic advisors to the educationally disadvantaged students.

As advisors to these students, they were able to identify four factors which were interfering with the students' success at the university: 1) suicide schedules, 2) financial needs, 3) personal needs and expectations, and 4) basic academic skills (10).

In working with one particular student to alleviate these problems, these instructors began to develop the structure of a support system. In June 1974, Moore and Pentecost, with the assistance of Frank Christ, Coordinator of the University Learning Assistance Support System, wrote a grant to establish a comprehensive, institutionalized support system for disadvantaged nursing students. Although the project was not funded until July 1975, it began in 1974 due to the commitment of everyone involved.

Goals

Based on two critical problem areas, academic and psycho-social, Moore and Pentecost identified four goals for the support system: 1) improvement of personal learning skills, 2) ongoing assistance in learning course content, 3)

enhancement of self image, and 4) maintenance of personal motivation (10). These goals led to the reality of the need for ongoing academic advisement, diagnostic/prescriptive learning assistance, personal counseling and a commitment by the student (10). To fulfill these needs, a support system was established which included the Department of Nursing, the Counseling Center, the Educational Opportunities Program Tutorial Services, and the Learning Assistance Center.

The roles of the Nursing Department are those of director, coordinator, academic advisor, counselor, and instructor. The Counseling Department provides support to the student in the area of psycho-social development. The Educational Opportunities Program provides tutorial services, and the Learning Assistance Center provides support in the area of personal learning skills.

Learning Assistance

The Learning Assistance Center, initiated at California State University, Long Beach, in 1972, is an outreach of the counseling service. The center uses a systems approach. It is learner-centered and has a diagnostic/prescriptive rationale which considers learning to be individualistic, cybernetic, mathemagenic and personalized (2).

In August, 1978, I was appointed by the Department of Nursing, Disadvantaged Nursing Student Grant, to the position of learning assistance facilitator. In this position, I was assigned a cubicle in the Learning Assistance Center where I would have easy access to materials, hardware and software, and personnel.

As the learning assistance facilitator for disadvantaged nursing students, I have a dual role: personal facilitator to the students and facilitator for the laboratory component of the course, Nursing 150, *Explorations in Nursing*. This course was developed by Wanda Pentecost in 1974. The goals of the course are to provide more realistic concepts about nursing, to identify services and educational opportunities available to the students (campus resources), and to improve learning skills. The course is an institutionalized, credit/noncredit course applicable toward fulfilling degree electives. The rationale behind the credit/noncredit was to alleviate any burden on the students concerning their grade point average (GPA). Credit toward electives allows the student to take the course as part of a twelve unit load, affords time to pursue improvement of learning skills, and makes the student accountable. In the Fall of 1979, Nursing 150 will be a mandatory requirement for all disadvantaged nursing students desiring the services of the support system.

The lab component of Nursing 150 deals with three major reading and study problem areas: 1) study management (time management, task organization, and study environment), 2) major course related skills (study reading-SQ3R, responsive listening/notemaking, and classroom tests), and 3) auxiliary course skills (library research and writing skills).

Prior to the first lab session, the students are required to take a self-paced, audio-tutorial program for individual orientation to the Learning Assistance Center. They also tour the nursing learning center and view the module "Why, What, How of Modules." During the first lab session the students take the *Survey of Reading/Study Efficiency (SR/SE)*. The purpose of the *SR/SE* is to identify, profile and individually program student needs. This information is transferred to a profile sheet and then fed into a computer. The computer printout identifies the critical problem areas for each student. The *SR/SE* is used in the Nursing 150 course as a pre-and post-test and for prescribing individual programs for the students.

To improve the learning skills in the major reading study areas, the program, *You Can Learn To Learn*, (Christ and Adams) has been incorporated into the lab. The program consists of six units: 1) Why Learn To Learn, 2) Study Reading (SQ3R and Mapping-Underlining), 3) Study Management (Time Management, Task Organization and Environment), 4) Listening/Notemaking (two parts), 5) Taking Exams, and 6) Campus Resources. The multimedia program uses slides, cassettes, and a student workbook. In addition, the program includes an instructor's manual and a class or center wall chart. Each module begins with an introductory vignette, uses questions to provoke attention, incorporates question and answer frames to give students immediate feedback, includes a review segment before the unit evaluation, and provides practice exercises. Each unit concludes with a student evaluation of the unit and provides a student/facilitator talk back sheet (6).

While the program is comprehensive, it does not cover the area of auxiliary course skills (library research and writing skills). The library research and writing skills component are incorporated into a student assignment. The student is required to write a term paper on a nursing subject. A library orientation is conducted during one of the lab sessions. During consecutive lab sessions, the students view Section I, *Clarity in Exposition*, of the *Mini Course in Rhetoric and Critical Thinking*. This is a cassette-workbook program consisting of six modules: 1) Organizing Your Writing, 2) Outlining, 3) Unity, 4) Coherence, 5) Emphasis, and 6) Adequate Development. Following each module, the student performs a task related to the material obtained from the module. At the completion of all six tasks the student will have completed the required term paper.

While the lab component attempts to accomplish the goal of improvement of personal learning skills, accomplishment of the goal of ongoing assistance in learning course content falls to the learning facilitator and the Educational Opportunities Program Tutorial Services. Course content material is housed in the learning assistance center. The role of the facilitator is to articulate with faculty in the various university disciplines to assure accurate and updated material. The Educational Opportunities Program provides tutorial services. It is a policy of the nursing advisors to encourage the students to seek tutorial help during the first week of class rather than wait until they receive the results of the first exam or quiz. Many of the students.

however, continue to wait until they are in academic difficulty. To insure optimum results from the tutorial program, a system of accountability has been established among the facilitator, the tutorial services coordinator, and the student. A weekly report is sent to the facilitator from the tutorial services coordinator identifying those students receiving tutorial services. During the individual counseling sessions, the facilitator and the student discuss the student's attendance at the tutorial sessions and what effect tutoring has had on academic success.

The individual counseling sessions are an important part of the facilitator's role. Each student is required to make a monthly appointment to see the facilitator. During these sessions, the student and the facilitator discuss any personal, financial or academic problems the student is incurring, as well as problems in the area of learning skills. Together, the facilitator and student review the lab workbook for completeness in order to identify study problem areas, to suggest further remediation, and to prescribe selected programs. The progress of the student in the area of reading and study skills is recorded in the student's folder and on the wall chart, as previously mentioned. The wall chart is divided into ten study and reading skills areas. A box is provided for each study skill. A diagonal line placed through a square on the chart indicates that the student was present during that lab presentation. An X in the square indicates the presence of the student at that lab session and the completion of all requirements. The wall chart provides the facilitator with an evaluation of the progress of the student in each study skill area. Evaluation is an ongoing function of the support system, not only between the student and facilitator, but of the total program.

Evaluation

During the past three years of the program, an ongoing evaluation has taken place. In one of her reports, Marie Branch, a project director for the Western Interstate Council for Higher Education in Nursing, stated: "This program is unusually successful in providing support services for academically disadvantaged students. There is statistical evidence for the fact that this program has prevented course failure and attrition of students whose academic profiles upon admission would have been predictable for either or both dire outcomes." (10)

In the words of a student in the program, "Because of the learning assistance support I was able to accomplish an astonishing 4.0 GPA in two natural science courses, each with three hour labs, one social science course, and P.E. I will continue to use the services in the learning assistance support system and recommend them to all my classmates."

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